This chapter will consider the neuropsychology of religious and spiritual experience. An analysis of the neuropsychological basis of these experiences serves several important purposes: (a) to illuminate the biological roots of these experiences and provide new information regarding the function of the human brain, (b) to provide a new understanding of how and why these experiences have played such a significant role in human thought and history, and (c) to lead to an understanding of the relationship between these experiences and human health and psychological well-being.

Religious and spiritual experiences, such as meditation, prayer, and ritual, have been described in the biomedical, psychological, anthropological, and religious literature. Furthermore, there are a large number of studies which have already begun to examine the neuropsychological and physiological correlates of such experiences. It is likely that such experiences became possible with the evolution of various structures in the brain of early primates and eventually of *Homo sapiens*. The concatenation of "religiogenic" brain mechanisms in *H. sapiens* was accompanied historically by an explosion of religious traditions that have continued to permeate human societies since prehistoric times. In light of this evolutionary pattern, neurobiological and neuropsychological correlates of religious and spiritual experiences have begun to be identified. Furthermore, by considering other rele-
vant studies in neurobiology, a more complex model of neurophysiological events during religious and spiritual experience can be developed. More specifically, brain function can be considered in relation to its interconnection with other body physiology that can be mediated by the autonomic nervous system as well as the neuroendocrine system. A consideration of this relation between cognitive processes in the brain and the autonomic nervous system may yield a more complete understanding of a variety of spiritual experiences ranging from "awe" to intense unitary states. Thus, from the current literature, a foundation for the development of a neuropsychological model can be considered in order to guide future studies in the neurobiology of religious and spiritual experiences. In addition, the use of state-of-the-art brain imaging techniques, as well as other measures of brain activity, has been and will continue to be applied to investigate brain function during experiences such as meditation, prayer, and ritual experiences.

THE NEUROEVOLUTION OF SPIRITUAL EXPERIENCE

Evolution has led to the development of the complex neuronal connections that exist within the brain's cerebral hemispheres. The higher centers in the brain are also connected to the more primitive structures such as the limbic system. For the most part, the brain evolved its complexity to provide human beings improved abilities to delineate order in the external environment and to solve cognitive problems necessary for survival. In addition to purely cognitive aspects, the evolution of the brain led to human socialization. The ability to form family units, communities, and societies had a tremendous evolutionary advantage. The question is, How did these evolutionary changes in the brain lead to the development of spiritual experience, religion, and ritual?

The brain can be divided functionally into several primary cognitive functions (d'Aquili, 1978, 1983, 1986). We have previously referred to these functions as cognitive operators. Cognitive operators simply refer to the neurophysiological mechanisms that underlie certain broad categories of cognitive function. Thus, these operators do not exist in the literal sense but can be useful when considering overall brain function. The cognitive operators include abstraction of generals from particulars, the perception of causality in external reality, the perception of spatial or temporal sequences in external reality, and the ordering of elements of reality into causal chains giving rise to explanatory models of the external world whether scientific or mythical. Space does not permit us to describe in detail the neurophysiological substrates and neuroanatomical networks of all these operators. However, several operators require consideration.

The causal operator accounts for the causal sequencing of elements of reality as abstracted from sense perceptions (d'Aquili, 1978). This causal operator derives its function from the inferior parietal lobule in the left hemisphere, the anterior convexity of the frontal lobes, primarily in the left hemisphere, and their reciprocal neural interconnections (Luria, 1966; Pribram, 1973). The causal operator has
important relevance to the development of religious and spiritual experience (d’Aquili, 1978). This operator organizes any given strip of reality into what is subjectively perceived as causal sequences back to the initial terminus of that strip. In view of the apparently universal human trait of positing causes for any given strip of reality, we postulate that if the initial terminus is not given by sense data, the causal operator generates automatically an initial terminus. Western science refuses to postulate an initial terminus or first cause for any strip of reality unless it is observed or can be immediately inferred from observation. Under more usual (nonscientific) conditions the causal operator simply generates an initial terminus or first cause for a strip of reality. We are proposing that when no observational or “scientific” causal explanation is forthcoming for a strip of reality, gods, powers, spirits, or some other causative construct is automatically generated by the causal operator. Thus, the causal operator simply operates spontaneously on reality, positing an initial causal terminus when none is given.

If it is true that the causal operator necessarily analyzes reality, then human beings have no choice but to construct myths filled with personalized power sources to explain their world. The myths may be social in nature or they may be individual in terms of dreams, daydreams, or other fantasy aspects of the individual person. Nevertheless, as long as human beings are aware of the contingency of their existence in the face of what often appears to be a capricious universe, they must construct myths to orient themselves within that universe. Thus, they construct gods, spirits, demons, or other personalized power sources with whom they can deal contractually in order to gain control over a capricious environment.

A second operator that has particular significance regarding spiritual experience is the holistic operator. The holistic operator permits reality to be viewed as a whole or as a gestalt. This operator allows for the abstraction from particulars or individuals into a larger contextual framework. The holistic operator likely resides in the parietal lobe in the nondominant hemisphere, more specifically in the posterior or superior parietal lobule and adjacent areas that have been found to be involved in generating gestalt understanding about both sensory input and various abstract concepts (Bogen, 1969; Gazzaniga & Hillyard, 1971; Levy-Agresti & Sperry, 1968; Nebes & Sperry, 1971; Sperry, Gazzaniga, & Bogen, 1969; Trevarthen, 1969). It is also interesting to note that this area sits adjacent to the area in the dominant hemisphere that provides the neuroanatomical substrate for logical–grammatical operations. Thus, the right parietal lobe is involved in a holistic approach to things and the left parietal lobe is involved in more reductionist processes. We will consider how the holistic operator, in addition to the causal operator, functions with regard to spiritual experience.

**METHODS OF ATTAINING SPIRITUAL EXPERIENCES**

In further considering a neuropsychological and neuroevolutionary approach to the study of religious and spiritual experiences, it is important to consider two ma-
major avenues toward attaining such experiences: group ritual and individual contemplation or meditation. A phenomenological analysis reveals that the two practices are similar in kind, if not in intensity, along two dimensions: (a) intermittent emotional discharges involving the subjective sensation of awe, peace, tranquility, or ecstasy; and (b) varying degrees of unitary experience correlating with the emotional discharges just mentioned (d'Aquili & Newberg, 1993b). These unitary experiences consist of a decreased sense or awareness of the boundaries between the self and the external world (d'Aquili, 1986; d'Aquili & Newberg, 1993a, 1993b; Smart, 1958, 1967, 1969, 1978; Stace, 1961). The latter dimension can also lead to a sense of oneness between other perceived individuals, thereby generating a sense of community. At the extreme, unitary experiences can eventually lead to the abolition of all boundaries of discrete being, thus generating a state of what we have called absolute unitary being (AUB; d'Aquili & Newberg, 1993a, 1993b).

It should be noted that the experiences of group ritual and individual meditation have a certain degree of overlap such that each may play a role in the other. In fact, it may be that human ceremonial ritual actually provides the “average” person access to mystical experience (average in distinction to those regularly practicing intense contemplation such as highly religious monks). This by no means implies that the mystic or contemplative is impervious to the effects of ceremonial ritual. Precisely because of the intense unitary experiences arising from meditation, mystics are likely to be more affected by ceremonial ritual than the average person. Viewed dispassionately, one must conclude that ceremonial ritual, at its most effective, is an incredibly powerful technology whether for good or ill. Furthermore, because of its essentially communal aspects, it tends to have immeasurably greater social significance than meditation or contemplation. Although meditation and contemplation may produce more intense and more extended unitary states compared to the relatively brief flashes generated by group ritual, the former are almost always solitary experiences.

With regards to human ceremonial ritual, it is a morally neutral technology. Therefore, depending on the myth in which it is imbedded and which it expresses, ritual can either promote or minimize the structural aspects of a society and promote or minimize overall aggressive behavior. Utilizing Turner's concept of *communitas* (Turner, 1969) as the powerful unitary social experience usually arising out of ceremonial ritual, we can state that if a myth achieves its incarnation in a ritual that defines the unitary experience as applying only to the tribe, then the result is only the *communitas tribus*. It is certainly true that aggression within the tribe has been minimized or eliminated by the unifying experience generated by the ritual. However, this may only serve to emphasize the special cohesiveness of the tribe vis-à-vis other tribes. The result may be an increase in intertribal aggression even though intratribal aggression is diminished. The myth and its embodying ritual may, of course, apply to all members of a religion, a nation state, an ideology, all of humanity, and all of reality. Obviously, as one increases the scope of what is included in the unitary experience, the amount of overall aggressive behavior decreases. If indeed a ceremonial ritual were giving flesh to a myth of the
unity of all being, then one would presumably experience brief senses of *communitas omnium*. Such a myth–ritual experience approaches meditative states such as Bucke’s (1961) cosmic consciousness or even AUB (d’Aquili & Newberg, 1993a, 1993b). However, such grand scope is, unfortunately, unusual for group ritual in human ethnographic experiences.

**A NEUROPHYSIOLOGICAL REVIEW**

Any understanding of the neuropsychological basis of spiritual experience necessarily requires at least a basic understanding of neurobiology. Therefore, it is helpful to consider here the neurobiological concepts that are particularly relevant to spiritual experience. We will consider some of the major anatomical and functional components of human neurobiology. Furthermore, we will try to build this review using a “bottom-up” approach, considering the more primitive evolutionary aspects first and finishing with the cerebral cortex.

**THE AUTONOMIC NERVOUS SYSTEM**

The autonomic nervous system is responsible, in conjunction with the rest of the brain, for maintaining baseline bodily function. Thus, this system keeps us alive but also plays a crucial role in the overall activity of the brain as well as in the generation of fundamental emotions such as fear. The autonomic nervous system is traditionally understood to be composed of two subsystems, the sympathetic and parasympathetic systems (Joseph, 1990; Kandel & Schwartz, 1993). The sympathetic system subserves the so-called fight-or-flight response, the physiological basis of our adaptive strategies either to noxious stimuli or to highly desirable stimuli in the environment (Gellhorn, 1967; Gellhorn & Loofbourrow, 1963). The principal function of the sympathetic system is control of short-range adaptation to events in the environment. It initiates and carries out action directed either at acquiring or avoiding stimuli of survival interests to the animal. The sympathetic system mediates the expenditure of vital resources, increasing heart rate and blood pressure, increasing muscle efficiency, dilation of the pupils of the eye, erection of body hair, ejaculation, and increased respiration (Gellhorn, 1967; Gellhorn & Loofbourrow, 1963; Joseph, 1990; Kandel & Schwartz, 1993). Since all these functions are involved in the expenditure of the body’s energy and metabolism, the total of the sympathetic system with its associated brain structures has been called the ergotropic system (Lex, 1979).

The parasympathetic system, on the other hand, is responsible for maintaining homeostasis (Gellhorn, 1967; Gellhorn & Loofbourrow, 1963; Kandel & Schwartz, 1993). It regulates physiological maintenance activities and vegetative functions, such as growth of cells, digestion, relaxation, and sleep. Parasympathetic functions include a storage of vital resources, decrease of heart rate and blood pressure, collection of waste products, penile erection, and slowing of res-
iration (Gellhorn, 1967; Gellhorn & Loofbourrow, 1963; Joseph, 1990; Kandel & Schwartz, 1993). Since all these functions are involved with the conservation of body energy and the maintenance of baseline metabolism, the total of the parasympathetic system with its associated brain structures has been called the trophotropic system (Lex, 1979).

The ergotropic and trophotropic systems have often been described as "antagonistic" to each other, but they can be complementary to each other under certain conditions. Normally, the increased activity of one tends to produce a decreased activity in the other. Thus, each system is designed to inhibit the functioning of the other in most circumstances. During normal waking consciousness, the specific balance between these two systems helps to characterize our baseline emotional state that we bring to the world, i.e., whether we are “uptight” or “laid-back.” However, studies have shown that if either system is driven to its maximal capacity, one can induce “reversal” or “spillover” phenomena (Gellhorn & Keily, 1972). This spillover phenomenon occurs when continued stimulation of one system to maximal capacity begins to produce activation responses (rather than inhibitory) in the other system.

We have proposed, in a previous work (d’Aquili & Newberg, 1993b), four basic categories of ergotropic/trophotropic events and their sensorial concomitants which may occur during extraordinary phases of consciousness. The hyper-trophotropic state, in which trophotropic activity is exceptionally high, may result in extraordinary states of quiescence. This activity can occur during normal sleep but may occur during deep meditation, prayer, or other related activities. In extreme form, a hypertrophotropic state may result in vivid, hyperlucid hallucinations via activation of the hippocampus. It is known that stimulation of the hippocampus, as well as the amygdala, can result in fully formed visual and auditory hallucinations (Halgren, Babb, & Crandel, 1978; Horowitz, Adams, & Rutkin, 1968). In addition, there may be an experience of oceanic tranquillity in which no thought or fantasy intrudes upon consciousness and no bodily sensations are felt. The hyperergotropic state occurs when ergotropic activity is exceptionally high. This results in an extraordinary stage of unblocked arousal and excitation and is associated with keen alertness and concentration in the absence of superfluous thought and fantasy (Czikszentmihalyi, 1975).

The next two autonomic states involve hyperactivation of one system with spillover into excitation of the other system. Thus, the hypertrophotropic state with ergotropic eruption is the state in which trophotropic activity is so extreme that spillover occurs and the ergotropic system becomes activated (Gellhorn & Keily, 1972). In the case of meditation, a person begins by activating the trophotropic system. As the hypertrophotropic state creates a sense of oceanic bliss, the ergotropic eruption results in the experience of a sense of a tremendous release of energy. The mediator may experience one of the so-called “active” blisses or energy rushes. The hyperergotropic state with trophotropic eruption occurs when ergotropic activity is so extreme that spillover occurs and the trophotropic system becomes activated. This may be associated with the experience of an orgasmic,
rapturous, or ecstatic rush arising from a generalized sense of flow and resulting in a trance-like state. If the trophotropic breakthrough is intense enough, vivid, hyperlucid hallucinations also may occur (Laughlin, McManus, & d'Aquili, 1992).

A fifth and final state involves maximal discharge of both the ergotropic and trophotropic systems (d'Aquili & Newberg, 1993a, 1993b). This state is associated with the experience of the total breakdown of discrete boundaries between objects, an absence of a sense of time, and the elimination of the self–other dichotomy. In other words, this ergotropic/trophotropic state is associated with the most intense forms of mystical experience and may lie at the heart of compelling spiritual experiences, meditative states, near death experiences, and other types of human experiential phenomena (d'Aquili & Newberg, 1993a, 1993b; Newberg & d'Aquili, 1994).

**BRAIN STRUCTURE AND FUNCTION**

The brain itself is divided into a number of subdivisions. The first subdivision separates the brain into a left and right hemisphere. The cerebral hemispheres are generally regarded as the seat of higher level cognitive and emotional functions. It is the cerebral cortex that is believed to separate human beings from other animals and has led to the development of thought, language, religion, art, and culture. There are also subcortical structures which are involved in basic life support, hormone regulation, and primal emotions (Joseph, 1990; Kandel & Schwartz, 1993).

In addition to the cerebral cortex, there is a group of structures near the base of the brain that is called the limbic system. This system evolved initially from subcortical structures but has come to be incorporated into parts of the cerebral cortex in human beings and some other primates (Joseph, 1990; Kandel & Schwartz, 1993). The limbic system is associated with the more complex aspects of emotions and is involved with assigning emotional feelings to various objects and experiences and directing these emotions outward via behavior. The limbic system is also interconnected with the autonomic nervous system with its ergotropic and trophotropic components. The limbic system is the neuroanatomical substrate that subserves the generation and modulation of feelings and emotions (Joseph, 1990; Kandel & Schwartz, 1993). The limbic system has also been implicated as having a major role in religious and spiritual experiences (d'Aquili & Newberg, 1993a, 1993b; Saver & Rabin, 1997).

The hypothalamus is one of the most ancient structures in the brain from an evolutionary perspective. The medial hypothalamus is an extension of the trophotropic system into the brain, whereas the lateral hypothalamus seems to be an extension of the ergotropic system into the brain (Joseph, 1990). The amygdala is more recently developed evolutionarily than the hypothalamus and is preeminent in the control and modulation of all higher order emotional and motivational functions (Kling, Lloyd, & Perryman, 1987; Perryman, Kling, & Lloyd, 1987; Schutze, Knuepfer, Eismann, Stumpf, & Stock, 1987; Steklis & Kling, 1985). It
has extensive interconnections with many parts of the brain through which it is able to monitor and determine which sensory stimuli are of motivational significance to the animal (Steklis & Kling, 1985). This includes the ability to discern and express even quite subtle social–emotional nuances such as love, affection, friendliness, fear, distrust, and anger. In addition to emotional and motivational functioning, the amygdala is also involved in attention, learning, and memory. Although the function of the amygdala is complex, it is becoming clear that the amygdala has primarily an ergotropic function, particularly in the lateral part (Chapman et al., 1954; Mark, Ervin, & Sweet, 1972; Ursin & Kaada, 1960). However, it does have some trophotropic functions as well.

The final structure of the limbic system that requires discussion is the hippocampus, which is shaped like a telephone receiver and is located slightly behind the amygdala. A number of investigators have assigned a major role to the hippocampus in information processing, including memory, new learning, cognitive mapping of the environment, attention, and some orienting reactions. The hippocampus is greatly influenced by the amygdala, which in turn monitors and responds to hippocampal activity (Joseph, 1990). The amygdala also acts to relay certain forms of information from the hippocampus to the hypothalamus. Thus, the hippocampus and amygdala complement each other and interact in regard to attention and generation of emotionally linked images as well as in regard to learning and memory. The hippocampus also partially regulates the activity in another structure that connects the autonomic nervous system to the cerebral cortex called the thalamus (Joseph, 1990). Since the thalamus is a major relay between a variety of brain structures, the hippocampus can sometimes block information input to various neocortical areas via the thalamus. It is important to note that while the amygdala may enhance information transfer between neocortical regions, the hippocampus usually tends to do the reverse. Through interconnections with the amygdala and the hypothalamus, in addition to other parts of the brain, the hippocampus can inhibit activity in these areas, thus preventing emotional extremes (Redding, 1967). This ability to inhibit the transfer of information from one region to another, in addition to its control over emotional responses, is very important in generating certain experiences such as mystical phenomena.

**TERTIARY ASSOCIATION AREAS**

Returning to the cerebral cortex, with its structures involved in higher cognitive, sensory, and emotional functioning, we note that there are four tertiary association areas that integrate neuronal activity from various other areas in the brain (Joseph, 1990; Kandel & Schwartz, 1993). These cortical regions are the inferior temporal lobe (ITL), the inferior parietal lobule (IPL), the posterior superior parietal lobule (PSPL), and the prefrontal cortex (PFC).

The PSPL is heavily involved in the analysis and integration of higher order visual, auditory, and somaesthetic information. Through the reception of auditory and visual input, the PSPL is also able to create a three-dimensional image of the
body in space (Lynch, 1980). Some cells in the PSPL, exerting “command” functions (Montcastle, 1976; Montcastle, Motter, & Anderson, 1980), can direct visual attention, become excited when certain objects are within grasping distance, and can motivate and guide hand movements toward these objects. There is some difference in function between the PSPL on the right and the PSPL on the left. It has been observed that the right parietal lobe appears to play an important role in generalized localization and the sense of spatial coordinates per se, whereas the left PSPL exerts influences in regard to objects that may be directly grasped and manipulated (Joseph, 1990; Kandel & Schwartz, 1993). That some neurons in the left PSPL respond most to stimuli within grasping distance and other neurons respond most to stimuli just beyond arms reach led Joseph (1990) to postulate that the distinction between self and world may ultimately arise from the left PSPL’s ability to judge these two categories of distances. Thus, it seems probable that the self–other dichotomy is a left PSPL function that evolved from its more primitive division of space into the graspable and the nongraspable.

The ITL neurons scan the entire visual field so as to alert the organism to objects of interest or motivational importance through its interconnections with the limbic nuclei (Herzog & Van Hoesen, 1976; Kling et al., 1987; Turner, Mishkin, & Knapp, 1980; Van Hoesen, Pandya, & Butters, 1972). When such objects are detected from the PSPL, the ITL’s visual form recognition neurons are activated, and the neurons with wide nonspecific visual fields are inhibited. In this manner, objects of interest are detected and fixated upon. Brain imaging studies using position emission tomography (PET) have also shown that the ITL and PSPL are involved in the visual perception and learning of complex geometric patterns (Roland, 1995).

The IPL is located at the confluence of the temporal, parietal, and occipital lobes. The IPL is an association area of association areas and maintains rich interconnections with the visual, auditory, and somaesthetic association areas. This area is responsible for the generation of abstract concepts and relating them to words (Joseph, 1990). It is also involved in conceptual comparison, automatic ordering of conceptual opposites, the naming of objects and categories of objects, and, in general, higher order grammatical and logical operations (Bruce, Desimone, & Gross, 1986; Burton & Jones, 1976; Geschwind, 1965; Jones & Powell, 1970; Seltzer & Pandya, 1978; Zeki, Symonds, & Kaas, 1982).

DEAFFERENTATION

One other aspect of brain function that may play an important role in spiritual experience is the ability of certain brain structures to block input into other structures. This blocking of input into a brain structure is called deafferentation. There is much evidence of such phenomena arising from natural (i.e., stroke or neuronal degeneration) or induced lesions in various parts of the brain (Baron et al., 1986; Gilbert & Peterson, 1991; Jeltseh, et al., 1994; Kataoka, Hayakawa, Kuroda, Yuguchi, & Yamada, 1991). Deafferentation of a brain structure also can occur via
the activity of inhibitory fibers from other nervous system structures. For example, Hoppe (1977) has shown that one hemisphere can be prevented from knowing what is occurring in the opposite hemisphere by suppressive actions of the frontal lobes. There is similar evidence that intrahemispheric information transmission can be partially or totally prevented by impulses originating in the prefrontal cortex and passing via the hippocampus (Green & Adey, 1956; Joseph, Forrest, Fiducis, Como, & Siegal, 1981; Nauta, 1958).

When a brain structure that ordinarily processes input has been deafferented to a significant degree, the structure is required to extract meaning from its own random neural activity. Such meaning takes the form of the intrinsic function of that structure (Joseph, 1990). Thus, a deafferented area of the brain that normally functions to analyze visual input will tend to interpret any neural activity as visual input resulting in a visual hallucination as occurs in patients with cortical blindness. Deafferentation via inhibitory mechanisms from other brain structures may ultimately give rise to various components of spiritual experiences.

A NEUROPHYSIOLOGICAL MODEL FOR THE SPIRITUAL CONTINUUM

It appears that there are a variety of spiritual experiences which, although they seem to be fundamentally different, actually have a similar neuropsychological and neuroevolutionary origin and therefore lie along the same spiritual continuum. Frederick Streng (1978) notes,

The term mysticism has been used to refer to a variety of phenomena including occult experience, trance, a vague sense of unaccountable uneasiness, sudden extraordinary visions and words of divine beings, or aesthetic sensitivity. For our purposes, we will narrow the definition to: an interior illumination of reality that results in ultimate freedom. Ninian Smart has correctly distinguished mysticism in this sense from “the experience of a dynamic external presence.” (p. 142)

Smart (1958, 1967, 1969, 1978) has further argued that certain sects of Hinduism, Buddhism, and Taoism differ markedly from prophetic religions, such as Judaism and Islam, and from religions related to the prophetic-like Christianity in that the religious experience most characteristic of the former is “mystical,” whereas that most characteristic of the latter is “numinous.”

Somewhat similar to Smart’s distinction between mystical and numinous experiences is that of W. B. Stace (1961), who distinguishes between what he calls extrovertive mystical experiences and introvertive mystical experiences. Stace characterizes these respectively as follows:

Extrovertive mystical experiences

1. The Unifying Vision—all things are one
2. The more concrete apprehension of the One as an inner subjectivity, or life, in all things
3. Sense of objectivity or reality
4. Blessedness, peace, etc.
5. Feeling of the holy, sacred, or divine
6. Paradoxicality
7. Alleged by mystics to be ineffable

Introvertive mystical experiences

1. The Unitary Consciousness; the One, the Void; pure consciousness
2. Nonspatial, nontemporal
3. Sense of objectivity or reality
4. Blessedness, peace, etc.
5. Feeling of the holy, sacred, or divine
6. Paradoxicality
7. Alleged by mystics to be ineffable

Stace then concludes that characteristics 3–7 are identical in the two lists and are therefore universal common characteristics of mystical experiences in all cultures, ages, religions, and civilizations of the world. However, it is characteristics 1 and 2 in which the distinction is made between extrovertive and introvertive mystical experiences in his typology. One can see the similarity between Stace's extrovertive mystical experience and Smart's numinous experience and between Stace's introvertive mystical experiences and Smart's mystical experience proper.

A neurobiological analysis of mysticism and other spiritual experiences might clarify some of the issues regarding mystical and spiritual experiences by allowing for a typology of such experiences based on the underlying brain functions. In terms of the effects of ceremonial ritual, we, along with other colleagues, have proposed that rhythmicity in the environment (i.e., visual, auditory, or tactile) drives either the ergotropic or trophotropic system to maximal capacity with the possibility of spillover and simultaneous activation of the other system creating unusual subjective states (d'Aquili, 1983; d'Aquili and Newberg, 1993a, 1993b). For the most part, this neurophysiological activity occurs as a result of the rhythmic driving of ceremonial ritual. This ultimately results in a progressive deafferentation of certain parts of the right PSPL (which, the reader will recall, is the neurobiological basis of the holistic operator), creating an increasing sense of wholeness progressively more dominant over the sense of the multiplicity of baseline reality. Ceremonial ritual may be described as generating these spiritual experiences from a bottom-up approach since it is rhythmic sounds and behaviors of the ritual that eventually drive the ergotropic and trophotropic systems. It should also be mentioned that the particular system initially activated (ergotropic or trophotropic) depends on the type of ritual. Rituals themselves might therefore be divided into "slow" and "fast" rituals. Slow rituals might involve calm, peaceful music and soft chanting to generate a sense of quiescence via the trophotropic system (d'Aquili & Newberg, 1993b). Fast rituals might utilize rapid or frenzied danc-
ing to generate a sense of heightened arousal via the ergotropic system (d’Aquili & Newberg, 1993b).

However, activation of the holistic operator (the right PSPL and adjacent structures) and the attainment of ecstatic and blissful unitary states can also be achieved via other mechanisms. For example, meditation approaches the situation from the opposite direction from ceremonial ritual and highly rhythmic behavior (d’Aquili & Newberg, 1993a, 1993b). Thus, meditation appears to utilize a top-down mechanism using cognitive/emotional activity to drive the ergotropic/trophotropic system to maximum activation. This appears to occur via a complex mechanism of neural interactions.

A detailed mechanism for the neurophysiological basis of meditative experiences has been previously described (d’Aquili & Newberg, 1993a, 1993b). However, it may be helpful to review some of the major components of that model in order to develop a better understanding of the spiritual continuum. One form of meditation begins with the subject willing or intending to focus either on a mental image or an external physical object. In our model, impulses pass from the right PFC to the PSPL via the thalamus, which functions as a relay. These impulses are correlated with the person subjectively focusing their attention on a visual object. This object is presented by the ITL, which is subsequently spatially oriented by the PSPL.

We postulate that continuous fixation on the image presented by the right ITL begins to stimulate the right hippocampus, which in turn stimulates the right amygdala. The result is a stimulation of the lateral portions of the hypothalamus generating a mildly pleasant sensation. Impulses then pass back to the right amygdala and hippocampus, recruiting intensity as they go along. This then feeds back to the right PFC, reinforcing the whole system with progressively intense concentration upon the object. Thus, a reverberating loop is established.

In our model, the circuit continues to reverberate and to augment in intensity until the stimulation of the hypothalamic ergotropic centers (lateral part) reaches maximum, thus leading to a spillover such that maximal stimulation of the hypothalamic trophotropic centers (medial part) occurs. At this point, there would be maximal stimulation feedback through the limbic structures to both the left and right PFCs. This results in instantaneous maximal stimulation of the left PFC, with immediate total blocking of input into the left PSPL tending to obliterate the self–other dichotomy. In the right hemisphere, even though from the moment of spillover there should be likewise maximal limbic stimulation of the right PFC which should generate total deafferentation of the right PSPL, there is already an ongoing, powerful stimulation system from the right PFC to the right PSPL. This stimulation has been reinforced by a constant feedback loop going through the right ITL (the neurophysiological basis of “focusing on an object”).

Therefore, the inhibitory ability of the right PFC, although at maximum, must fight against a preexistent and very strong facilitatory or stimulating system that is generated by fixating and focusing on the original object. Since the meditating
subject is still intending to focus on the object of meditation, this system continues to be reinforced even in the presence of ecstatic feelings generated by the limbic system and the progressively stronger activity of the inhibitory system. Throughout the period of time when there is conflict in the right hemisphere between facilitatory and inhibitory mechanisms there has been total instantaneous blocking of input into the left PSPL. Thus, the self–other dichotomy has been obliterated during a period of time, perhaps fairly long, when the image still remains a focus of meditation. We suggest that this is the period of time when the subject feels absorbed into the object or describes a sense of becoming one with the object of meditation. Eventually, in the face of maximal ergotropic and trophotropic activity, either the meditator surrenders or, possibly even against his or her will, the inhibitory influences take over and total blocking of input into the right PSPL occurs. Since the left PSPL has already been totally blocked, the self–other dichotomy has been obliterated for some time. Thus, the endpoint of the meditation is maximal stimulation of the ergotropic and trophotropic systems with total blocking of input into both the right and left PSPL, creating the experience of AUB. The period of time from spillover to the final assertion of dominance of the inhibitory neurons of the right prefrontal cortex is the period of absorption of the meditator into the object of meditation.

Regarding a comparison of ceremonial ritual with meditation, the end result can be the same in both situations (d’Aquili and Newberg, 1993a, 1993b). In other words, both methods can result in simultaneous activation of the ergotropic and trophotropic systems with concomitant deafferentation of the left and right PSPL. This results in the experience of bliss and ecstasy as well as in profound unitary states. It should be noted that AUB is unlikely to occur in ceremonial ritual since it is very difficult to maintain the level of rhythmic activity necessary for the continued driving of the ergotropic system to result in simultaneous maximal activity of both the ergotropic and trophotropic systems. However, ceremonial ritual still can result in powerful unitary experiences.

In terms of a spiritual continuum, unitary states play a crucial role. While it is clearly difficult to define what makes a given experience spiritual, the sense of having a union with some higher power or fundamental state seems an important part of spiritual experiences. To that end, this union helps reduce existential anxiety as well as provides a sense of control over the environment (d’Aquili, 1978; Smart, 1967, 1969). The bottom line in understanding the phenomenology of subjective religious experience is to understand that every religious experience involves a sense of the unity of reality at least somewhat greater than the baseline perception of unity in day to day life (d’Aquili, 1986). This is another way of saying that a more intense application of the holistic operator to incoming stimuli, over and above its baseline function, coupled with the limbic or emotional stimulation that accompanies such increased functioning, results in experiences which are usually described as religious or spiritual. Whatever the mechanism for the increased functioning of the holistic operator may be, whether it is an external rhythmic driver,
profound meditation, extreme fasting, or other physiological alterations, the bottom line is activation of the holistic operator with accompanying experiences of increased unity over multiplicity.

AUB is a state of ultimate unity and is described in the mystical literature of all the world's great religions. When a person is in this state he or she loses all sense of discrete being and even the difference between self and other is obliterated. There is no sense of the passing of time, and all that remains is a perfect timeless undifferentiated consciousness. However, it is important to realize that the limbic system is intimately involved in the perception of these experiences (Saver & Rabin, 1997). Thus, when such a state is suffused with positive affect there is a tendency to describe the experience, after the fact, as personal. Such experiences are often described as a perfect union with God (the Unio mystica of the Christian tradition) or else the perfect manifestation of God in the Hindu tradition. When such experiences are accompanied by neutral affect they tend to be described, after the fact, as impersonal. These states are described in concepts such as the abyss of Jacob Boeme, the void or nirvana of Buddhism, or the absolute of a number of philosophical/mystical traditions. There is no question that whether the experience is interpreted personally as God or impersonally as the absolute, it nevertheless possesses a quality of transcendent wholeness without any temporal or spatial division whatsoever.

We have postulated that these rare states of AUB are attained through the “absolute” functioning of the holistic operator (d’Aquili, 1982; d’Aquili and Newberg, 1993a, 1993b). As described in the previous model, the neurological substrate for the holistic operator involves the function of the right PSPL. However, during AUB, not only would there be absolute functioning of the holistic operator but also there would be an intense activity of structures in the left cerebral hemisphere associating with that wholeness the intense consciousness of the reflexive ego associated with normal left hemispheric functioning. Thus, the experience of AUB is not a vague sense of undifferentiated wholeness but one of intense consciousness.

We propose, however, that even in more ordinary perceptions, whenever the sense of wholeness exceeds the sense of multiplicity of parts or of discrete elements in the sensorium, there is an affective discharge via the right brain–limbic connections that Schwartz, Davidson, and Maer (1975) have shown to be of such importance. This tilting of the balance toward an increased perception of wholeness, depending on its intensity, can be experienced as beauty, romantic love, numinosity or the religious awe described by Smart, religious exaltation in the perception of unity in multiplicity (described by Stace as extrovertive mystical experience), and eventually various trance states culminating in AUB.

We propose that the spiritual continuum is based on the activation of the holistic operator with the subsequent experience of greater senses of unity within the sensorium. As there is an increasing sense of unity, there is the perception of ever greater approximations of a more fundamental reality (d’Aquili, 1986). Furthermore, the more the holistic operator functions in excess of a state of balance with
the analytic functions of the left hemisphere, the stronger will be the associated emotional charge. Thus, in any perception, such as a piece of music, a painting, a sculpture, or a sunset, there is a sense of meaning and wholeness which transcends the constituent parts. In aesthetic perceptions such as those just described, this transcendence is slight to moderate. We would locate the overarching sense of unity between two persons in romantic love as the next stage in this spiritual continuum. The next stage is characterized as numinosity or religious awe and occurs when the holistic operator functions with a degree of intensity which generates a very marked sense of meaning and wholeness extending well beyond the parts perceived or well beyond the image generated but in a "wholly other" context. Both Otto (1970) and Smart (1969) have described this experience in detail. It is often considered (rather incorrectly we believe) to be the dominant Western mystical experience. It is experienced when an archetypal symbol is perceived or when certain archetypal elements are externally constellated in a myth. As we move from numinosity along the continuum—that is, as the function of the holistic operator increasingly overwhelms synthetic perception—we reach the state of religious exaltation which Bucke (1961) has called cosmic consciousness. This state is characterized by a sense of meaning and wholeness extending to all discrete being whether subjective or objective. The essential unity and purposefulness of the universe is perceived as a primary datum despite the perception and knowledge of evil in the world. During this state, there is nothing whatsoever that escapes the mantle of wholeness and purposefulness. However, this state does not obliterate discrete being, and it certainly exists within a temporal context. This roughly corresponds to Stace's extrovertive mystical experience.

**Proof of the Model**

Clearly, one of the most important aspects of a study of spiritual experiences is to find careful, rigorous methods for empirically testing hypotheses. One such example of empirical evidence for the neurophysiological basis of the spiritual continuum described previously comes from a number of studies which have measured neurophysiological activity during states in which there is activation of the holistic operator. Meditative states comprise perhaps the most fertile testing ground because of the predictable, reproducible, and well-described nature of such experiences. Studies of meditation have evolved over the years to utilize the most advanced technologies for studying neurophysiology.

Originally, studies analyzed the relationship between electrical changes in the brain (measured by electroencephalography) and meditative states. Corby, Roth, Zarcone, and Kopell (1978) showed that during meditation, proficient practitioners had increased alpha and theta amplitudes compared to baseline. These changes were associated with increased autonomic activation. Banquet (1972) found an increased intensity of a frontal alpha pattern during the early stages of meditation. Later stages of meditation were characterized by bursts of theta waves on elec-
troencephalography (EEG) associated with short shallow breathing and the disappearance of tonic electromyographic activity. Another study found hemispheric asymmetries in alpha and beta activity associated with meditation (Benson, Malhotra, Goldman, Jacobs, & Hopkins, 1990). Unfortunately, EEG is limited in its ability to distinguish particular regions of the brain that may have increased or decreased activity.

For this reason, recent studies of meditation have utilized brain imaging techniques such as single photon emission computed tomography (SPECT) and PET. Future studies may also use functional magnetic resonance imaging. There are limitations of each type of technique for the study of meditation. It is important to ensure that the technique is sensitive enough to measure the changes. Also, each of these techniques may interfere with the normal environment of meditation. For this reason, we have performed our initial studies with SPECT, which measures changes in cerebral blood flow.

Our initial data of highly proficient meditators (Newberg, Alavi, Bai.me, & d’Aquili, 1997a; Newberg, Alavi, Baime, Mozley, & d’Aquili, 1997b) showed significant increases in brain activity in the region comprising the PFC consistent with focusing attention during meditation. We have also observed significant decreases of activity in the area of the PSPL possibly consistent with deaferentation of the PSPL. Interestingly, there was also a strong inverse correlation between activity in the PFC and in the PSPL. This might indicate that the more active the PFC, the more the PSPL is deafferented. These results, although preliminary, are consistent with the model for the neurophysiological basis of meditative experiences presented in this chapter, a model that was developed prior to these imaging studies. Furthermore, our results corroborate an earlier PET study of meditation that showed an increased frontal:occipital ratio of cerebral glucose metabolism (Herzog et al., 1990/1991). However, more studies, using improved methods, will be necessary to further elucidate the neuropsychology of meditation and spiritual experiences. That the underlying neurophysiology of extreme meditative states can be considered at all allows for the conceptualization of many other spiritual experiences that lie along the spiritual continuum. Different spiritual experiences might be explained using the previously mentioned physiological mechanisms. They can be derived from either a top-down or bottom-up approach; either way, they eventually activate the holistic operator via the PSPL and ultimately generate their emotional value via activation of the limbic system and autonomic nervous system.

CONCLUSION: SPIRITUAL EXPERIENCE IN PSYCHOLOGICAL PRACTICE

In this section, using a neurophysiological analysis of spiritual experiences, we consider how these experiences impact clinical practice. Western society has historically emphasized the importance of causality, technological advances, and empiricism. It is from these values that Western medicine, psychiatry, and psycholo-
gy have developed. We propose that regardless of the connotation of the concept of spirituality in Western society, mystical and meditative experiences are natural and probably measurable processes that are and can be experienced by a diversity of people of different races, religions, and cultures. Those having spiritual experiences can have a variety of neuropsychological constitutions.

In addition, it is important for clinicians to be sensitive and knowledgeable regarding spiritual and philosophical beliefs (Worthington, McCullough, & Sandage, 1996). Professionals need to be capable of distinguishing normal, healthy spiritual growth from psychopathology. It is hoped that some of the neurophysiological analysis described previously might allow for a distinction between normal spiritual experiences and pathological states. Such a distinction might depend on the ergotropic/trophotropic balance created by the experience or by the alterations in the functioning of the brain structures subserving the holistic or causal operators. However, the fact that spiritual experiences have an effect on autonomic function as well as other cortically mediated cognitive and emotional processes suggests that such experiences not only affect the human psyche but also may be utilized to assist in the therapy of various disorders.

Studies have demonstrated that prayer and meditation can improve both physical and psychological parameters (Carson, 1993; Kabat-Zinn, Lipworth, & Burney, 1985; Kaplan, Goldenberg, & Galvin-Nadeu, 1993; Worthington et al., 1996). The more the underlying neurophysiological correlates of spiritual experiences are understood, the more such experiences can be analyzed and utilized in clinical practice. Therefore spiritual experience can be very useful in clinical psychological and psychiatric practice. Furthermore, clinicians themselves can be instrumental in helping their patients with personal and spiritual growth by discussing various meditative and/or spiritual practices and encouraging patients to approach these practices in an unambiguous manner. According to Rowan (1983), a humanistic psychologist, "[the self] is the missing link between the psychological and the spiritual. And it offers a safe way into the difficult and apparently dangerous realms of mysticism" (p. 24). Therefore, it seems natural that spiritual experiences, such as those encountered in meditation and prayer, could become an adjunct to Western therapeutic practices and that developing oneself spiritually could become an important part of psychosocial development.

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6. THE NEUROPSYCHOLOGY OF SPIRITUAL EXPERIENCE


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In the past 15 years, researchers in religion and mental health have been increasingly generative. Following Bergin’s (1980, 1983) early investigations into the relationships between religion and mental health, other comprehensive reviews (Larson, Pattison, Blazer, Omran, & Kaplan, 1986; Worthington, 1986) also helped to usher in a period of intensified scientific interest in the relationship between religion and mental health. Since the 1980s, the publication of several scholarly books (Pargament, 1997; Schumaker, 1992; Shafranske, 1996) and several comprehensive field reviews (Gartner, Larson, & Allen, 1991; Gorsuch, 1995; Larson, et al., 1992; Worthington, Kurusu, McCullough, & Sandage, 1996) in important mental health journals has signaled that religion and mental health have acquired a degree of legitimacy as an area of scientific investigation; to some extent, it is now respectable (or at least permissible) for academic scholars in the mental health professions to study religion. Given this recently acquired degree of legiti-
macy, it might perhaps be time to assess the existing scientific landscape and set new goals for crossing the scientific frontiers in religion and mental health.

MOVING FROM CONSCIOUSNESS-RAISING TO SCIENTIFIC PROGRESS

One of the major effects of the previous years of research on religion and mental health has been to raise scientific awareness about the potentially salutary effects of religion on mental health, despite the vocal minority (e.g., Ellis, 1992; Watters, 1992) who continue to insist that committed religiousness is conducive to mental disorder. Through the accretion of studies in the fields of psychiatry, family medicine, geriatrics, psychology, sociology, counseling, and social work, most informed scholars would probably now agree that religious factors are relevant to a comprehensive understanding of mental health.

Nevertheless, the field of religion and mental health has a long way to go before it yields a hard core of consensually validated scientific findings regarding the relationship between religion and mental health. To date, there are few replicated, well-demonstrated “facts” about the relationship between religion and mental health on which most experts would agree. While the accretion of such replicated, well-demonstrated facts is surely not the only goal of science, our perception is that this field would be helped immensely by the strategic development of a body of generally accepted knowledge about the relationship between religion and mental health. Such facts might help us to develop, for instance, an understanding of which elements of religious experience are relevant to the course of which mental health conditions for which groups of people.

If the field is far from a body of well-accepted, replicated facts, it is even further away from a hard core of research findings that could inform practitioners about how to influence mental health via the appropriate treatment of religion and spirituality. Knowledge is lacking that would allow clinical professions, on the basis of scientific knowledge, to draw clinically useful conclusions, such as “Given that this client is highly committed to religion X and has this set of psychological symptoms, I should be thinking about diagnosis Y”, “Given that this client comes from this particular religious or spiritual background, his MMPI scale 2 score is going to be of limited validity in assessing depression. Therefore, I should use another tool for assessing depression as well”, or “This patient is expressing spiritual distress that seems to be exacerbating her depressive symptoms. I should refer her to a chaplain for more thorough spiritual assessment.”

There does not seem to be any a priori reason why the field of religion and mental health could not yield consensually validated and clinically useful findings such as these. However, the development of such a body of knowledge has not been the focal point for the field of research on religion and mental health. We believe that moving from a general recognition that religion is relevant to mental health to the
strategic development of consensually validated and clinically useful knowledge is the next great frontier for this field.

TO BUILD A KNOWLEDGE BASE, RESEARCHERS SHOULD BEGIN TO SPECIALIZE

Currently, most of the researchers who are actively involved in conducting research on religion and mental health are generalists. As such, most have tried to keep up with trends in the measurement of religiousness, religion and depression, religion and anxiety, religion and coping, religion and substance use, and research on using religious approaches to the treatment of psychological disorders. While the generalist approach served the field well through early years of development (e.g., 1980–1997), being a generalist in religion and mental health is becoming increasingly difficult as the scope of the subject grows. Many scientific fields eventually outgrow the abilities of the generalist to monitor the existing literature and, as a result, specialties form.

LACK OF SPECIALIZATION LEADS TO BLAND GENERALIZATIONS

As early as 1983, the published research on religion and mental health portended the eventual need for greater specialization. In his meta-analysis of 24 published studies on religion and mental health, Bergin (1983) found that the overall relationship between measures of religiousness and measures of mental health was very small (mean $r = .09$) providing, in Bergin's words, "little positive information or incentive for further inquiry" (p. 176). Based on other relevant research in the social sciences, Bergin suggested that his bland meta-analytic results were probably the result of synthesizing many diverse measures of mental health that were likely to be influenced by religious involvement in different (and perhaps opposite) directions. Adding to the blandness, Bergin's meta-analytic effect size combined the results of studies that had used many diverse measures of religiousness. Finally, Bergin acknowledged that the studies included in his review included both clinical and nonclinical (e.g., captive undergraduate) samples. Given this aggregation across clinical measures, measures of religiousness, and samples, it is not surprising the Bergin found such meager evidence for a relationship between religion and mental health.

Building on Bergin's (1983) review, Gartner et al. (1991) used a different approach to reviewing the research on religion and mental health. By dividing the research according to clinical outcomes (e.g., depression and anxiety), Gartner et al. concluded that religious involvement appears to have a beneficial role on some indexes of mental health but an ambiguous or negative relationship on oth-
ers. Gartner et al.'s review shows that monolithic statements about the relationship between religion and mental health are clearly unwarranted; religious commitment can influence various aspects of mental health in very different ways. In the following sections, we delineate several of the dimensions along which the research on religion and mental health might become more specialized in order to develop a broader base of consensually validated and clinically useful knowledge about the relationship between religion and mental health that avoids the bland generalizations that necessarily result from aggregating findings too broadly.

THE DIMENSIONS OF SPECIALIZATION

DIMENSION 1: RELIGIOUS INVOLVEMENT

The measurement of religion in the social sciences presents a perpetual challenge for researchers interested in religion and health (Gorsuch, 1984; Levin & Vanderpool, 1987; MacDonald, LeClair, Holland, Alter, & Friedman, 1995; Williams, 1994). Much of the measurement of religion in mental health has consisted of single-item measures of religious affiliation, religious attendance, or self-rated religiousness. While such single-item measures of religiousness are generally presumed to be indicators of a single underlying construct—"religiousness" or "religious commitment"—Levin and Vanderpool observed that the amalgamation of such variables into single measures of religiousness tends to obfuscate the effects of religion on health since it is not clear what such a "metavariable" of religiousness might mean.

The Pitfalls of Taking the Measurement of Religion for Granted

Similarly, generalizations about the relationship between religion and mental health without respect for how religion is conceptualized or measured in these various studies also confuses the effects of religion on mental health; measures of religiousness are not necessarily interchangeable. For example, in Smith's (1996) investigation of 131 citizens of Missouri and Illinois who were affected by the 1993 Midwest flood, frequency of church attendance was inversely proportional to subjects' positive affect 5 months after the initial assessment. On the other hand, self-rated religiousness was directly proportional to positive affect 5 months after the initial assessment. Thus, these are two important findings for an at-risk population. The difference between these two results is important, but no adequate explanation for such discrepancies currently exists (although researchers commonly offer post hoc methodological explanations such as sampling error or restriction of range or measurement error in one or both variables). Should we conclude, then, that church attendance is risky and that "self-rated religiousness" is salutary in coping with natural disasters or should we conclude from Smith's study that, on balance, religiousness has no reliable longitudinal effect on positive affect fol-
lowing a natural disaster? Other studies (e.g., Ellison, 1995; Pressman, Lyons, Larson, & Strain, 1990) also find that the direction of the religion–mental health relationship is very much dependent on how religiousness is assessed. As a result of the field’s inability to adequately predict which aspects of religion might be conducive (or deleterious) to mental health in a given circumstance, such studies are less helpful than they could be in helping to build a base of consensually validated knowledge. Moreover, no research-minded clinician could have felt comfortable in making a recommendation to a flood victim about how religion might assist or hinder him or her in efforts to cope (based on Smith’s inconsistent findings). The lack of specificity in teasing out the effects of various measures of religion leads to an unfortunate bottleneck: If these practices are maintained our hard-won scientific data might never be translated into scientifically defensible clinical practices.

Specialized Measurement of Religion

Greater specialization with respect to the measurement of religion might lead to greater understanding of how aspects of religious involvement, such as religious attendance (Levin & Vanderpool, 1987), prayer (e.g., McCullough, 1995), or use of religious resources for coping with stress (Pargament, 1997), might influence mental health status (see Levin, 1996, for a helpful taxonomy of eight dimensions of religious involvement). Social scientists interested in religion from clinical and social science perspectives have invested tremendous energy in developing measures of religious beliefs, motivations, behaviors, and knowledge (Hall, Tisdale, & Brokaw, 1994; Hill & Hood, in press; Miller, 1997) as well as a wide variety of measures of spiritual experience and spiritual well-being (MacDonald et al., 1995). Use of such well-accepted measures of religious involvement and spirituality would add considerable depth to the broad range of studies on religion and mental health that currently involve a single-item measures of religiousness. They would also help us gain a greater understanding of which aspects of religiousness are particularly conducive or deleterious to mental health in specific clinical contexts and disorders.

Development of Clinical Measures

Another bottleneck related to the measurement of religion is that research-based tools for assessing mental health-relevant aspects of religion in the clinical setting are virtually nonexistent (Strayhorn, Wiedman, & Larson, 1990). For example Kehoe and Gutheil (1994) reviewed many scale-based measures of suicide assessment to determine how many assessment tools assessed aspects of clients’ religious beliefs. They found not a single tool that included religious beliefs or religious involvement as an aspect of the assessment of suicide risk, even though the existing data suggest that some aspects of religious involvement could deter suicide (Bagley & Ramsay, 1989; Gartner et al., 1991; Stack, 1992).

Similarly, very little work has been done to develop clinically useful tools for assessing patients’ religious lives and how various elements of their religious lives
might be related to greater resiliency or greater risk for psychological difficulties. Pargament and Koenig (1998) are validating of a tool for assessing various dimensions of religious coping in a sample of medical patients. Other researchers in religion and mental health should examine the prospects for developing measures of religiousness that would enable clinicians to assess the religious components of clients’ mental health difficulties or their risk for developing mental health difficulties in the face of stressful life circumstances. These assessment tools could be based on religious beliefs that have been linked to particular mental health outcomes (e.g., Bagley & Ramsay, 1989; Kroll & Sheehan, 1989). The development of such assessment tools would be a natural way to begin building a clinically useful science of religion and mental health.

In addition, research on the differential validity of psychological assessment tools for various religious groups, especially culturally distinct groups that might respond differently to the content of standardized measures of well-being and psychopathology, is needed to ensure that such tests are providing valid assessments for members of such groups (Hall et al., 1994; Larson, Lu, & Swyers, 1996). The work of Richards and Davison (1992) illustrates the need for such psychometric research. They found that Rest’s (1979) Defining Issues Test, an instrument for assessing Kohlbergian moral development, had a built-in bias against subjects from conservative religious groups (e.g., Latter-day Saints), who responded to some of the items differently than did subjects from nonconservative religious groups.

Given Richards and Davidson’s (1992) results, it is not unreasonable to expect that other psychometric instruments are also plagued with differential validity problems for conservative religious groups (Gartner et al., 1991). Since a scientifically based approach to mental health treatment requires the accurate assessment of patients’ well-being and symptomology, the need for systematic examination of the differential validity of psychological tests for religious groups could be a productive area of inquiry for research on religion and mental health.

**DIMENSION 2: DIAGNOSTIC GROUPS**

A second dimension on which researchers should concentrate is the dimension of diagnostic groups. Researchers rarely find that all measures of mental health and mental illness are related to measures of religiousness in the same way. For example, Kendler, Gardner, and Prescott (1997) conducted interviews with nearly 1000 pairs of female twins from the Virginia Twin Registry. They assessed the women on measures of personal religious devotion, religious conservatism, and the conservatism of the religious group with which the women were affiliated. Also, they assessed depression, panic disorder, phobia, bulimia, alcoholism, and generalized anxiety disorder according to *DSM-IV* (American Psychiatric Association [APA], 1994) criteria. While one or more of the measures of religion were inversely related to lifetime risk of major depression, alcoholism, and nicotine dependence, none of the religious measures were related to lifetime risk of generalized anxiety disorder, panic disorder, phobia, or bulimia. Such inconsistencies are
7. FUTURE DIRECTIONS IN RESEARCH

not uncommon. Other researchers have found religious measures to predict some measures of well-being, psychopathology, and psychiatric symptoms but not others (e.g., Benson, Masters, & Larson, 1997; Strayhorn et al., 1990).

For the field to develop certainty about the disorders and conditions that are most heavily influenced by religion, individual researchers should commit themselves to programs of research on, for example, the effects of religion on anxiety disorders, on depressive disorders, or on drug use. While several scholars have clearly identified themselves with the study of religion on small clusters of clinical problems such as drug use (e.g., Gorsuch, 1995; Miller, 1997), few researchers have managed to specialize successfully in single disorders or sets of disorders.

A Natural History Approach to Studying Specific Disorders

Researchers might focus their programmatic research by using a “natural history” approach to studying religion and specific indexes of mental health. A natural history approach—a concept that Levin (1996) adapted from epidemiology—assumes that understanding how religion influences mental health or mental illness requires conceptualizing how the effects of religion on physical health might change across the various phases or stages through which a person (a) becomes vulnerable to a disease, (b) experiences a “full-blown illness,” and (c) eventually recovers or is disabled by the illness. Levin argued that we must begin to investigate how religion influences health and illness by promoting (or interfering with) processes that move an organism toward vulnerability, dysfunction, illness, and disability or toward equilibrium and, eventually, recovery.

Were many researchers to adopt a natural history approach to the study of religion and mental health, we might one day have an integrated body of research on religion and depression, for instance, that elucidates the mechanisms by which religious involvement is associated with (a) genetic and biologic factors that affect one’s vulnerability to major depression, (b) psychological and perceptual factors that influence the appraisal of stressful circumstances, (c) perceived social support during and effective coping with environmental stressors that often precede the onset of depression, (d) social support and coping during a full-blown major depressive episode, (e) effective treatment of depression, and (f) eventual recovery from depression. Currently, we know of no theoretical framework that incorporates all six of these points at which religious involvement might influence the natural history of major depressive illness.

The lack of specialization in conceptualizing the effects of religion using the natural history concept is unfortunate because data are available as building blocks for several of the stages. While little is known about how religion might influence biological vulnerabilities to major depression, research has revealed that religious commitment might endow some benefits through influencing how people appraise, seek social support during and cope with stressful events (e.g., Pargament et al., 1988, 1990; Pargament & Koenig, 1998; Pargament, Smith, & Koenig, 1996; Pressman et al., 1990).

In addition, at least seven studies have used experimental designs to explore the
The efficacy of religious approaches to treating depression in Christian and Muslim patients. These studies suggest that religious approaches to treatment might play a very small role in enhancing treatment outcomes (McCullough, 1998; Worthington et al., 1996).

Obviously, many gaps must be filled. However, a natural history approach to conceptualizing the effects of religion on depression holds much promise for helping to specify the relationship between religion and mental health.

**DIMENSION 3: AGE GROUP**

Just as it has been shown in the fields of medicine, psychiatry, and psychology that there is a need to develop specialties (e.g., pediatrics and geriatrics) to understand and treat the physical and mental health issues that accompany particular phases of life, the field of research on religion and mental health also needs specialists who concentrate their efforts on the relationship between religion and mental health for specific age groups (e.g., children, adolescents, adults, older adults, and the very old). While many researchers have conducted studies examining specific age groups (e.g., Shortz & Worthington, 1994), it does not appear that many researchers have focused programmatic efforts on specific age groups, though there are notable exceptions in the area of geriatrics (Sherrill, Larson, & Greenwold, 1993). Virtually no researchers, for instance, have focused on religion and mental health in children or adolescents (Benson et al., 1997).

There are two reasons why we must begin to develop specialists in certain age groups. First, as people age, changes occur in manifestations of religious involvement (Levin & Taylor, 1997). For example, the religious faith of children is obviously quite closely related to the religious faith of their parents and other adult figures in their lives (Benson et al., 1997; Shafranske, 1992). Also, since children often lack higher-order cognitive processes and abstract reasoning, approaches for assessing children’s religious faith might need to be different from those that assess adults’ religious faith (Basset et al., 1990; Goldman, 1964). Second, as people age, their manifestations of mental health and mental illness change (e.g., Kohn, Westlake, Rasmussen, Marsland, & Norman, 1997; Rummans, Smith, Lin Waring, & Kokmen, 1997).

**DIMENSION 4: GENDER (AND OTHER SUBJECT VARIABLES)**

Certainly, researchers could specialize in other subject variables. For example, it would be quite appropriate for researchers to focus exclusively on the role that gender might play in the relationship between religion and mental health, especially since expressions of religious faith (Levin & Taylor, 1997; Strawbridge, Coen, Shema, & Kaplan, in press) and the prevalence and manifestations of many mental disorders (APA, 1994) differ between men and women. While several researchers have begun to examine the “gendered” aspects of the relationship between religion and mental health (e.g., McCullough, Worthington, Maxey, & Rachal, 1997), greater specialization could and should occur.
Another subject variable that might be an important dimension of specialization is ethnicity (Benson et al., 1997). It is quite clear that both religious faith and mental health manifest themselves in specific ways for particular ethnic groups. Again, some researchers have focused on the relationship between religion and mental health for specific ethnic groups (e.g., Herd & Grube, 1996; Stack & Wasserman, 1995) and on the differences between ethnic groups in the religion-mental health relationship (e.g., Ellison, 1995). However, in the next decade, it will be important to find ways to convert these findings into clinically useful knowledge about how the religion-mental health relationship manifests itself for specific age, gender, and ethnic groups.

**THE ROLE OF QUANTITATIVE REVIEWS IN THE FORMATION OF SPECIALTIES**

Two types of quantitative literature reviews could be immensely helpful in delineating the most productive areas in which specialization could begin to occur. First, systematic reviews (e.g., Larson et al., 1992; Sherrill et al., 1993) could be used to quantify how frequently (and with what methods) religious variables are addressed in the best journals within specific mental health specialties. For example, it would be enlightening to assess how frequently religious variables have occurred in the leading journals that address (a) child and adolescent psychology and psychotherapy, (b) psychology and psychotherapy with ethnic minorities, and (c) psychology and psychotherapy with women. These findings could help to estimate the extent to which researchers in the mental health specialties have begun to build specialized knowledge about religion and mental health.

Second, meta-analytic reviews could be useful in actually producing consensually validated and clinically useful knowledge about the relationship between religion and mental health for which we have been advocating in this chapter. While several meta-analytic reviews of research on religion and mental health have appeared in the literature (e.g., Bergin, 1983; Donahue, 1985; Witter, Stock, Okun, & Haring, 1985), we are unaware of any published meta-analytic review on religion and mental health in the past 10 years. This is most unfortunate since ample studies now exist for conducting meta-analytic reviews that would specify the nature of the relationship between religion and mental health along some of the dimensions that we have described.

In preparing this chapter, for example, we searched through PsycLIT and MEDLINE to survey the existing literature on religion and depression. We found dozens of published empirical studies that investigated the relationship between religion and depressive symptoms. We suspect that many others may have been conducted as masters theses or doctoral dissertations. Since the data are available for conducting a meta-analytic review of research on religion and depression, it is puzzling that more researchers have not used this methodology. Whereas earlier meta-analyses of research on religion and mental health might have only attempted to estimate the mean effect size for the relationship between religion and de-
pression (Bergin, 1983; Donahue, 1985; Witter et al., 1985), many more interesting questions can be addressed as well, such as whether the relationship between religion and depression changes (a) according to which measures are used to assess religious involvement, (b) according to which measures are used to assess depression, (c) across the natural history of depression, and (d) as a function of subjects’ characteristics, such as age, gender, and ethnicity.

Clearly, these are the very questions that need to be addressed in order to develop the kind of knowledge base we have been advocating for in this chapter. While many researchers in this area might recall that meta-analytic technology received criticism earlier in its development for conceptual and methodological shortcomings (e.g., Shapiro, 1994), many of these shortcomings have been remedied. Indeed, the meta-analytic technology available to researchers in the 1990s is quite robust (Cooper & Hedges, 1994; Hunter & Schmidt, 1990; Johnson, 1989). We hope meta-analyses will be performed on the relationship between religiousness and mental illnesses, such as depression, substance use, suicide, and anxiety disorder, in the years to come.

**SUMMARY**

The research on religion and mental health has been a source of sustained scientific interest for many researchers since the early 1980s. This vigorous activity has, almost through brute force, raised a general awareness among many scholars that a curious and perhaps important relationship exists between religious faith and mental health. However, for religion and mental health to become a scientific discipline, it is necessary to develop a strategic approach to conducting research so that we can accumulate a database of well-established, clinically useful knowledge. The approach that we have recommended here will probably require that researchers specialize. However, if the field of research on religion and mental health can meet the challenges of specialization, the field might not only continue to grow but also begin to mature and yield valid, clinically useful knowledge about the relationships between religion and mental health.

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The conclusion seems inescapable that religiosity is, on almost every conceivable count, opposed to the normal goals of mental health. . . . On the whole religious piety and dogma do much more harm than good; and the beneficent behaviors that they sometimes abet would most likely be more frequent and profound without their influence.

—Ellis (1986, pp. 42–43)

A world without God would be a flat, monochromatic world, a world without color or texture, a world in which all days would be the same. Marriage would be a matter of biology, not fidelity. Old age would seem as a time of weakness, not of wisdom. In a world like that, we would cast about desperately for any sort of diversion, for any distraction from the emptiness in our lives, because we would never have learned the magic of making some days and some hours special.

—Kushner (1989, p. 206)

People rarely take a neutral position when it comes to religion. Some, such as Albert Ellis, argue that religion hinders the struggle for growth, freedom, and ac-
tualization. From this perspective, religion contributes to human pathology by emphasizing magical thinking and superstition above reason and rationality. Others, such as Rabbi Harold Kushner, see religion in a much more positive light. Religion, it is said, is an essential element in the search for significance; only by looking beyond ourselves can we discover purpose in our lives, achieve intimacy with others, and find a sense of comfort in living. Only with the aid of the sacred can we understand the incomprehensible, manage the unmanageable, and endure the unbearable.

Differences in the assessment of the benefits and harms of religion extend beyond scholars’ writings to people in times of crisis. One parent of a young child with developmental delays said, “I really feel that my faith and my trust in God have been the stronghold of being able to deal with all of this—I can’t be mad at Him because He’s given me a less than perfect child, healthwise” (cited in Weisner, Belzer, & Stolze, 1991, p. 659). Another parent dealing with a child in a similar situation says quite differently, “[Everyone says] God only gives special children to special people; and I say ‘I’m not special . . . I don’t want any more problems!’ and I’m kind of to the point where I’m bitter, I’m angry right now” (cited in Weisner et al., 1991, p. 659).

Given such differing views of religion, it may be tempting to bypass evaluations of religion entirely. However, the question cannot be ignored: How we evaluate religion shapes the way we behave toward it. Imagine, for instance, how Kushner and Ellis would handle clients who raise spiritual issues in counseling.

In this chapter, we consider the effectiveness of religion in the coping process. The following are among the questions we will address: Is religion related to the outcomes of stressful life events? If so, how? Is religious coping more helpful to some individuals than others? Is religious coping better suited for certain types of situations than others? and Are there unique benefits to using religious forms of coping compared to other nonreligious or secular coping efforts?

As a prelude to this chapter, it is important to note the following: (a) A traditional, broad definition of religion is used here, one that includes both personal—spiritual and institutional expressions of faith; and (b) this evaluation of the effects of religion on the coping process is not based on the ultimate truth of any religious creed. Scientist cannot determine whether there is a God, whether people really experience miracles, or the ultimate truth of religious teachings. What can be evaluated scientifically is whether religious methods of coping affect adjustment to difficult negative life circumstance and, if so, how (for an extended treatment of many of the points in this chapter, see Pargament, 1997).

SELF-REPORTED EVALUATIONS OF RELIGION’S EFFECTS ON OUTCOMES

Is religion helpful, harmful, or irrelevant? A straightforward way to learn how people evaluate the efficacy of religion is to ask them. In fact, many researchers
have done just that and their results clearly suggest that people do find religion helpful. For instance, in a study of patients who were about to undergo cardiac surgery, 73% reported that prayer was very helpful to them in preparing for the surgery (Saudia, Kinney, Brown, & Young-Ward, 1991). These results seem to generalize across a wide range of people, such as parents dealing with children with physical handicaps (Barsch, 1968), women coping with breast cancer (David, Ladd, & Spilka, 1992), and physically abused spouses (Horton, Wilkins, & Wright, 1988). Generally, between 50 and 85% of the participants in these studies reported that religion was helpful in coping with their situations.

From these studies, the results seem fairly conclusive: Religion does have a positive impact on the coping process. Before jumping to this conclusion too quickly, however, it should be noted that these researchers asked people directly how important religion was to them when coping. What if these participants were simply reluctant to make an unfavorable judgment about their religion and admit that their faith did not help them at all? It is possible that the relatively high proportion of individuals who reported that religion was helpful was a result of the way the question was phrased. How do people respond to a more open-ended question about the impact of religion on adjustment?

In response to this type of question, significant numbers of people still mention that religion was helpful to them in coping, although the percentages are generally lower. In one study, widows and widowers were asked an open-ended question about the sources of comfort they found during their grieving. Fifty-nine percent stated that their religious beliefs were a major source of comfort (Glick, Weiss, & Parkes, 1974). Similar results have been reported among people with chronic illness and cancer (Raleigh, 1992), elderly women and men with medical problems (Conway, 1985/1986; Koenig et al., 1992), and adults facing unhappy periods in their lives (Veroff, Douvan, & Kulka, 1981). Across these samples, anywhere from 18 to 69% of the participants spontaneously mentioned that their faith was helpful to them in coping.

Thus, even in response to more open-ended questions, religion emerges as a source of help in coping (Koenig, 1994). However, we should exercise caution in interpreting these results. People may report that religion was helpful to them because, in fact, it was. Favorable comments, however, may reflect a desire to "keep the faith," whether or not it was helpful to them in that particular circumstance. To suggest that religion was not a source of support may in itself be threatening to the individual. It may be better to evaluate one's faith favorably than to consider the alternative and the possibility that one's faith is limited.

To evaluate the efficacy of religion, stronger tests are needed. Rather than evaluate religious helpfulness or harmfulness in one summary assessment, it makes sense to measure religious involvement separately from its end result and examine the relationship between the two. Through statistical analyses we can then determine whether religion is a positive force, a negative force, or simply irrelevant to adjustment to negative life events.

So far, we have discussed religion's impact on adjustment in general terms. Be-
before we proceed further, however, we briefly mention some of the specific types of outcomes that researchers have examined. Generally, these studies focus on three types of outcomes: physical health, mental health, and religious. Physical health outcomes of stressful life events include physical symptomology (e.g., changes in blood pressure), length of hospital stay, and mortality. Mental health outcomes include coping efficacy (e.g., how well the event was handled), life satisfaction, depression, and anxiety. Finally, religious outcomes include changes in the individual’s perceived closeness to God or spiritual growth as a result of coping with the event. Each type of outcome captures something different about the efficacy of religious coping; by examining all of them, we paint a more complete picture of the coping process.

### RELIGIOUS ORIENTATIONS AND OUTCOMES TO NEGATIVE LIFE EVENTS

We begin this review by focusing on macroanalytic studies of religion, in which religion is measured as a stable, global, personal disposition—a part of an individual’s orienting system. By orienting system we mean a general way of perceiving and dealing with the world. It consists of values, habits, generalized beliefs, relationships, and personality (Pargament, 1997). It is not only a frame of reference that is used to anticipate and come to terms with events in one’s life but also a resource drawn upon in times of stress. Depending on the nature of this system, it can be a help or a hindrance to the coping process. Long-standing religious beliefs, congregation attendance, faith in God, and a commitment to live according to a set of religious ideals are all ways that religion can be expressed in a person’s orienting system. The basic question is, Do people who are more religious in this global sense experience more positive or negative outcomes of stressful life events than those who are less religious?

Generally, studies that focus on the relationship between religious orientations and outcomes of negative life events can be categorized into four types. The first type of study examines the relationship between personal expressions of religion and outcomes. Religion is measured in terms of beliefs, religious commitment, faith, religious salience, and frequency of prayer. The second type of study focuses on organizational rather than personal religious expressions. Here, religion is measured by participation in congregational services and activities. A third type makes use of the standard measures of religious orientation: intrinsic, extrinsic, quest, and indiscriminant proreligiousness (Hood, Spilka, Hunsberger, & Gorsuch, 1996). Finally, a few studies use “mixed measures” of religion that incorporate both personal and organizational indices.

What can we say about the relationship between religious orientations and the outcomes to critical life events? Table 8.1 summarizes the results of 46 studies that have examined this relationship. These studies target people faced with a variety of stressful life events, such as chronic illness, abortion, surgery, and the death of
TABLE 8.1  A Talley of the Results of Research on the Statistical Relationship between Measures of Religious Orientation and the Outcomes of Negative Events

<table>
<thead>
<tr>
<th>Measure</th>
<th>Significant positive relationships</th>
<th>Significant negative relationships</th>
<th>Nonsignificant relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal religious expressions (religious beliefs, religious salience, frequency of prayer, religious faith)</td>
<td>34 (47)</td>
<td>1 (1)</td>
<td>65 (88)</td>
</tr>
<tr>
<td>Organizational religious expressions (participation in worship services and other congregational activities)</td>
<td>37 (52)</td>
<td>1 (2)</td>
<td>62 (85)</td>
</tr>
<tr>
<td>Standard religious orientation measures (intrinsic extrinsic, quest, indiscriminate proreligious)</td>
<td>29 (27)</td>
<td>11 (10)</td>
<td>60 (55)</td>
</tr>
<tr>
<td>Mixed personal and organizational expression measures</td>
<td>40 (4)</td>
<td>10 (1)</td>
<td>50 (5)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>34 (130)</td>
<td>4 (14)</td>
<td>62 (233)</td>
</tr>
</tbody>
</table>
a child, spouse, or loved one. The statistical relationships between religious orientation and outcomes for each study were sorted into one of three categories: significant positive, significant negative, and nonsignificant. Notice that across all four types of studies, 34% of the statistical relationships between religious orientation and adjustment were significantly positive, whereas about 62% of the statistical relationships were nonsignificant. Only rarely were significant negative relationships found between religiousness and adjustment. Therefore, when significant effects were found, they were largely positive. Specifically, higher levels of church involvement, personal religious beliefs, faith, and a more intrinsic religious commitment were related to beneficial outcomes. For instance, O'Brien (1982) examined patients undergoing hemodialysis and found that those patients who were frequent church attenders were more compliant with their treatment programs, more sociable, less alienated, and, in general, better adjusted to their circumstances than those who attended fewer church services. However, recalling the high percentage of people who reported that religion was helpful to them in coping, the numbers of positive results seem to fall short of what we might have expected to find. As Table 8.1 indicates, in the majority of relationships, religiousness was, in fact, unrelated to adjustment. Furthermore, this general pattern was true no matter how religious orientation was assessed.

How can we explain the relatively modest nature of these findings? It is possible the results are a product of methodological flaws, such as inadequacies in the ways religiousness and adjustment were measured. However, the large number of studies and the consistency of the results across the range of religious orientations argue against dismissing these results entirely. The alternative is to take these findings as genuine and try to make sense of them.

### A COPING FRAMEWORK

Coping theory provides one explanation. We cope in an effort to maximize what is of value or significance to us in difficult times. Significance can be something psychological, social, physical, material, or spiritual. It can vary from person to person and it can be good or bad. Regardless of how significance is defined, coping involves an attempt to maintain or transform those things that we care for deeply in times of stress (Pargament, 1997).

A religious orienting system, like a general orienting system, provides a general frame of reference during times of stress. Although it is important as a general guide, a religious orienting system is one step removed from the specific coping methods an individual might use in a given situation. Knowing that religious faith is a central part of an individual's orienting system tells us something about that person, but it does not tell us how that person's faith expresses itself in specific situations. From the perspective of coping theory, adjustment is likely to have more to do with the specific use of coping in that situation than with the orienting system. If this notion is correct, then measures of religious coping should predict the
outcomes of coping more consistently than measures of general religious orienting systems. Next, we will spotlight microanalytic studies concerning the relationship between specific religious coping activities and adjustment to negative life events.

**RELIGIOUS COPING AND OUTCOMES TO NEGATIVE LIFE EVENTS**

In recent years, there have been hundreds of studies on the coping process. Interestingly, relatively few have made serious attempts to assess the impact of religion. Some, however, have examined the relationships between specific religious coping strategies and adjustment to negative life events. In contrast to the macroanalytic studies, in which religion is measured as a global construct, these studies examine specific, functionally oriented expressions of religion in times of stress. One such study was conducted by Dalal and Pande (1988). They examined the role of causal beliefs in patients faced with temporary or permanent disability in an Asian Indian, Hindu sample. Attributions of the accident to Karma or God’s will, they found, were significantly correlated with psychological recovery.

How common are such findings? Table 8.2 presents a tally of the results of 40 studies that examined the statistical relationships between measures of specific types of religious coping and the outcomes of negative life events (Pargament, 1997). Most of these studies included more than one measure of religious coping and more than one measure of adjustment. Ignoring the distinctions among the different types of religious coping, overall 53% of the relationships between religious forms of coping and adjustment were statistically significant. This figure is higher than the 38% figure for studies of the relationship between religious orientations and adjustment. This increase is due not only to the higher percentage of significantly positive relationships but also because of a higher proportion of negative relationships between some forms of religious coping and adjustment.

A more direct comparison of measures of religious coping and measures of religious orientation was reported by Pargament et al. (1990). Working with several samples of people dealing with a variety of life crises, they asked participants to respond to both religious orientation and religious coping measures. Participants described the most serious negative event they had experienced within the past year and then indicated how they coped with the event. Three outcome measures were obtained: the religious outcome of the event, coping efficacy, and the recent mental health of the individual. Through statistical analyses the authors were able to assess the unique predictive power of the religious coping measures (controlling for the religious orientation measures) and the unique predictive power of the religious orientation measures (controlling for the effects of the religious coping measures). The religious coping variables were much better predictors of all three outcome measures than the religious orientation measures. Similar results have been reported in other studies (Pargament et al., 1994; Pargament, Smith, & Brant, 1995).
TABLE 8.2 Tally of the Results of Research on the Statistical Relationship between Measures of Religious Coping and the Outcomes of Negative Events

<table>
<thead>
<tr>
<th>Measure</th>
<th>Significant positive relationships</th>
<th>Significant negative relationships</th>
<th>Nonsignificant relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spiritual coping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spiritual support</td>
<td>46 (43)</td>
<td>2 (2)</td>
<td>52 (48)</td>
</tr>
<tr>
<td>Spiritual discontent</td>
<td>0 (0)</td>
<td>56 (5)</td>
<td>44 (4)</td>
</tr>
<tr>
<td>Congregational coping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congregational support</td>
<td>39 (16)</td>
<td>2 (1)</td>
<td>60 (26)</td>
</tr>
<tr>
<td>Congregational discontent</td>
<td>0 (0)</td>
<td>54 (26)</td>
<td>46 (22)</td>
</tr>
<tr>
<td>Religious reframing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>God’s will and love</td>
<td>53 (19)</td>
<td>0 (0)</td>
<td>47 (17)</td>
</tr>
<tr>
<td>God’s punishment</td>
<td>0 (0)</td>
<td>52 (11)</td>
<td>48 (10)</td>
</tr>
<tr>
<td>Religious agency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-directing</td>
<td>4 (1)</td>
<td>31 (7)</td>
<td>65 (15)</td>
</tr>
<tr>
<td>Collaborative</td>
<td>46 (11)</td>
<td>8 (2)</td>
<td>46 (11)</td>
</tr>
<tr>
<td>Deferring</td>
<td>28 (9)</td>
<td>6 (2)</td>
<td>66 (21)</td>
</tr>
<tr>
<td>Pleading</td>
<td>19 (7)</td>
<td>59 (22)</td>
<td>22 (8)</td>
</tr>
<tr>
<td>Religious rituals</td>
<td>40 (30)</td>
<td>23 (17)</td>
<td>37 (18)</td>
</tr>
<tr>
<td>Patterns of religious coping</td>
<td>56 (15)</td>
<td>11 (3)</td>
<td>33 (9)</td>
</tr>
<tr>
<td>Total</td>
<td>32 (151)</td>
<td>21 (98)</td>
<td>47 (219)</td>
</tr>
</tbody>
</table>

We return to the question, Is religion helpful, harmful, or irrelevant in coping? The answer is yes. Religious coping is all of these. This answer, quite obviously, leaves much to be desired. The problem, however, is not with the answer but with the question—whether religion is helpful, harmful, or irrelevant in coping seems to assume that religion is only one thing. However, religious coping is not unidimensional.

Religious coping is multipurpose. It may provide comfort, stimulate personal growth, enhance a sense of intimacy with God, facilitate closeness with others, or offer meaning and purpose in life (Pargament & Park, 1995). Religious coping is also multiform. It may be passive (waiting for God to resolve the crisis), active (a force that motivates individuals to better the world), personal (seeking God’s love and care), interpersonal (seeking support from clergy and congregation members), problem focused (aiding in problem solving), or emotion focused (looking to God for emotional reassurance).

Given that religious coping may serve many functions and take many forms, a better question might be, What forms of religious coping are helpful, harmful, or irrelevant? Furthermore, is religious coping equally effective for all kinds of people in all kinds of situations? Does religious coping add anything special to the coping process? In the following sections, we examine these questions in more detail.
WHAT FORMS OF RELIGIOUS COPING ARE HELPFUL, HARMFUL, OR IRRELEVANT?

In Table 8.2 the microanalytic studies have been broken down into six different types of religious coping: spiritual, congregational, religious reframing, religious approaches to agency and control, religious rituals, and combinations of religious coping methods. Scanning the table shows some striking differences.

HELPFUL FORMS OF RELIGIOUS COPING

Spiritual Support and Collaborative Religious Coping

Perceptions of support, a partnership with God, and guidance from God in times of stress appear to be helpful in coping. For instance, in one study several dimensions of spiritual support were assessed, such as emotional reassurance ("trusted that God would not let anything terrible happen to me"), a close spiritual relationship ("sought God’s love and care"), and guidance in problem solving ("God showed me how to deal with the situation") (Pargament et al., 1990). Higher levels of spiritually based coping were associated with higher levels of psychological adjustment to a variety of stressors. Similar results have been reported in other studies (Cook & Wimberly, 1983; Harris et al., 1995).

Congregational Support

Empirical studies find that support from the congregation and clergy in stressful times is beneficial to its members. Although the 39% significant positive relationships for congregational support statistic in Table 8.2 may seem low, this percentage was heavily influenced by one study of people coping with the type of negative situation that is often problematic for many religious institutions—fetal or infant deaths (Lasker, Lohmann, & Toedter, 1989). Generally, positive outcomes seem to be the result of the support sought and received from the congregation/clergy and God (Gibbs & Achterberg-Lawlis, 1978).

Benevolent Religious Reframing

Attributions of the negative events to the will of God or to a loving God are generally tied to better outcomes. For instance, Jenkins and Pargament (1988) asked patients with various kinds of cancer how much they felt God was in control of their illnesses. Those who attributed more control over the illness to God reported higher self-esteem and better adjustment according to the ratings of nurses. Similar results have been reported in other studies (Brant & Pargament, 1995; Park & Cohen, 1993).

HARMFUL FORMS OF RELIGIOUS COPING

By looking more closely at the specific forms of religious coping presented in Table 8.2, it is clear that not all forms are helpful. Some religious coping methods are often tied to poorer outcomes.
Discontent with Congregation and God

When people do speak negatively of religion, their comments are often targeted at members of their congregation or clergy. Less often, people express negative feelings toward God as well. People who report dissatisfaction with the church, congregation, or God often experience poorer mental health status, more negative mood, and a poorer resolution to the negative life event. The feeling that God or the congregation has abandoned or let them down in their time of need seems to be associated with other feelings of despair, hopelessness, and resentment. Although expressions of religious anger are uncommon and often time limited (Croog & Levine, 1972; Pargament, et al., in press), we do not know whether the effects of such religious anger are long-lasting. Longitudinal studies of religious coping are needed to answer such questions.

Negative Religious Reframing: God's Punishment

The reframing of a negative event in terms of a punishment from God is also not very common. The cost of this form of coping in terms of guilt and fear of further repercussions might be too great. However, when such reframing does occur, poorer outcomes usually result. Specifically, studies have shown that those who report more negative religious reframing also report higher levels of distress and negative mood (Grevengoed, 1985; Pargament et al., in press).

FORMS OF RELIGIOUS COPING WITH MIXED IMPLICATIONS

Not all forms of religious coping can be easily classified as helpful or harmful. Table 8.2 indicates that some religious coping methods are associated with positive and negative outcomes.

Religious Rituals in Response to Crisis

Religious rituals are related to positive outcomes in 40% of the statistical relationships and to poorer outcomes in 23% of the relationships. How can we explain such mixed results? One possibility may have to do with the design and measures of these studies. Cross-sectional studies make it difficult to know whether rituals are the cause or the effect of poorer mental health. Religious rituals may lead to distress. Conversely, distress may mobilize the enactment of religious rituals. The mixed results may also reflect the many different types of rituals (e.g., confession, mourning, and healing) assessed in these studies. Some religious rituals may simply be more helpful than others. Similarly, some religious rituals may be more helpful to some groups than others.

Self-Directing, Deferring, and Pleading Religious Coping

Religion provides its adherents with many ways to attain control in coping. For example, Pargament et al. (1988) tested three religious methods to gain control: self-directing, deferring, and collaborative. Each method involved a different reported re-
relationship between God and the individual. The self-directing style emphasizes the individual’s personal responsibility and active role in problem solving. God is said to give individuals the freedom and resources to direct their own lives. The deferring style places the responsibility of problem solving on God. Rather than actively solve problems themselves, people wait for solutions to emerge through the active efforts of God. The collaborative style reflects the joint responsibility for problem solving by God and the individual. Both participants are seen as active partners.

The three styles had different mental health implications (Pargament et al., 1988). The self-directing and collaborative approaches were related to higher levels of psychological competence (i.e., the general level of psychological and social resourcefulness the person brings to life situations), whereas the deferring style was related to lower levels of competence. Aside from one other study (Harris, Spilka, & Emrick, 1990), however, the self-directing approach has been associated with more negative than positive outcomes. Also, the deferring approach has been tied to positive rather than negative outcomes in some studies. The creators of the scales have suggested that these mixed results may be explained by differences in the controllability of situations. For instance, in situations in which the individual does indeed have very little control, the most appropriate thing to do may be to defer control to God. The self-directing style may be more helpful in more controllable situations.

A similar explanation may account for the mixed results regarding pleas for direct intervention. While pleading for a miracle may not be an effective way to deal with controllable situations, it may offer a sense of vicarious control and mastery through God in situations that fall outside of the person’s control.

**POSITIVE AND NEGATIVE PATTERNS OF RELIGIOUS COPING**

We have examined specific religious coping methods and their implications for adjustment to negative life events. By closely examining these measures, we may have left the impression that each is used in isolation from the others. This does not appear to be the case. Modest to moderately high intercorrelations have been found among the various religious coping scales suggesting that people make use of religious coping methods in some combination with each other.

What are these combinations? Initial research suggests two patterns of religious coping methods: one composed of positive religious coping methods and one composed of negative religious coping methods (Koenig, Pargament, & Nielsen, in press; Pargament, Smith, & Koenig, 1996).

The tragedy of the Oklahoma City bombing provided one context for the study of these coping patterns. Six weeks after the explosion, 310 members of one Baptist and one Disciples of Christ church located near the blast site completed a religious coping measure, a measure of posttraumatic stress, and measures of adjustment to the tragedy. A factor analysis of the religious coping items resulted in
TABLE 8.3 Positive and Negative Religious Coping Subscales: Results from Members of Churches Near the Oklahoma City Bombing

Positive religious coping subscale items
- Thought about how my life is part of a larger physical force
- Worked together with God as partners to get through this hard time
- Looked to God for strength, support, and guidance in this crisis
- Thought about sacrificing my own well-being and living only for God
- Tried to find the lesson from God in this crisis
- Prayed for those who were killed in the bombing and for the well-being of their families and friends
- Looked for spiritual support from my church in this crisis
- Tried to give spiritual strength to other people
- Confessed my sins and asked for God’s forgiveness
- Asked God to help me find a new purpose in living
- Reminded myself that the victims of the bombing are now at peace with God in heaven
- Prayed for the spiritual salvation of those who committed this bombing

Negative religious coping subscale items
- Disagreed with the way my church wanted me to understand and handle this situation
- Felt that the bombing was God’s way of punishing me for my sins and lack of spirituality
- Wondered whether God had abandoned us
- Felt God was punishing the victims of the bombing for their sins and lack of spirituality
- Tried to make sense of the situation and decided what to do without relying on God
- Questioned whether God really exists
- Prayed to God to send those who were responsible for the bombing to Hell
- Expressed anger at God for letting such a terrible thing happen
- Thought about turning away from God and living for myself alone

two factors. The first factor, labeled positive religious coping, consisted of items that included spiritual support, collaborative religious coping, and benevolent religious reframing. The second factor, negative religious coping, included items that reflected discontent with the church and God, reframing the blast as a punishment from God, and prayers for divine retribution (Table 8.3; Pargament, 1997). Overall, people indicated that they used considerably more positive than negative religious coping. Those that made more use of the positive methods of religious coping also reportedly grew more as a result of the tragedy, both spiritually and psychologically. Negative religious coping, on the other hand, was associated with reports of greater callousness to others.

The question of whether these short-term effects on mental health hold up over a longer period of time must still be addressed. Perhaps the negative pattern of religious coping reflects a process of religious struggle that ultimately holds more beneficial implications for the individual. On the other hand, the positive pattern of religious coping may produce only short-term relief (or even longer term problems). Before reaching more definitive conclusions about the helpfulness or harmfulness of these patterns of religious coping, we need to extend these findings to other groups over longer periods of time.
In this section, we have examined the specifics of what people do with their religion and their effects on adjustment. We have, however, glossed over some variables that are potentially relevant, such as who is doing the coping and with what is the individual coping.

**Is Religious Coping More Helpful to Some People Than to Others?**

Very few studies have compared the helpfulness of religion to different groups faced with negative life situations. One exception is a national survey of black Americans in which participants were asked to indicate the one coping response that helped them the most in dealing with a serious personal problem (Neighbors, Jackson, Bowman, & Gurin, 1983). Overall, 44% said the prayer was the one coping response that helped them the most. Specifically, a higher percentage of females, older individuals, and lower income people reported prayer as most helpful. In another national survey, Veroff et al. (1981) found that prayer was reportedly more helpful to those who were black, less educated, widowed, churchgoers, and fundamentalists. Similar results have been reported in other studies (Bijur, Wallston, Smith, Lifrak, & Friedman, 1993; Ellison, 1991; Koenig, George, & Siegler, 1988).

Why should religion be more helpful to some groups—elderly, poorer, less educated, blacks, widowed, and women—in coping? It may be no coincidence that the groups that find religion more helpful are the same groups that report higher levels of personal religiousness and more frequent use of religion in coping (Hood et al., 1996; Pargament, 1997). For them, religion has become a larger part of their orienting system—a framework more frequently called upon for coping with major crises. It appears that those who invest more in their religion gain more from it when coping. Drawing on a more deeply established system of beliefs, practitioners, feelings, and relationships, these people may be in a better position to find compelling religious solutions (e.g., spiritual and congregational support or benevolent religious reframing) to fundamentally disturbing problems. But why? What do these groups have in common? In general, they often have less access to secular resources and power in our culture. Religion, for them, may represent an alternative resource that can be accessed more easily than others.

**Is Religion More Helpful in Some Situations Than Others?**

Although religious beliefs and practices are not reserved for times of loss and pain, people are more likely to turn to religion for help as situations become increasingly stressful. Many of the religious mechanisms of coping, as noted earlier, do seem to be specifically designed to help people through their most difficult times
in their life, when significance is at greatest risk. Perhaps, it would not be altogether surprising to find that religion is particularly helpful in moments of greatest stress.

Several studies have indeed shown that religion has the capacity to moderate the effects of stress. Maton (1989), for example, asked recently bereaved parents (high stress) and parents who lost a child more than 2 years ago (low stress) to complete measures of religious coping and adjustment. While spiritual support was related to better adjustment (lower levels of depression) among both the high- and low-stress groups, spiritual support was more strongly related to adjustment for the high- than the low-stress group. Other researchers have also reported a stress-buffering role of religion (Brown & Gary, 1988; Ellison & Gay, 1990).

Does it follow that religion is less than helpful to people in nonstressful situations? Not necessarily. Several studies also suggest that religion can operate as a stress deterrent—that is, a source of help at lower as well as higher levels of stress. For example, Pollner (1989) surveyed a national sample of adults and found that those who reported a close relationship with God also indicated more happiness and life satisfaction, regardless of whether they had experienced up to four major life events.

Whether and how religion works as a stress buffer or stress deterrent seems to depend on several factors, including the type of religious coping, the sample, type of outcome, and the type of study. For instance, Park, Cohen, and Herb (1990) found that intrinsic religiousness buffered the effects of uncontrollable life events on measures of depression among Protestant college students. However, intrinsic religiousness buffered the effects of controllable events among Catholic college students. The authors suggested that Catholic and Protestants may rely on different types of religious coping to deal with similar events. Catholics might draw on guilt-reducing religious beliefs to resolve the distress associated with controllable negative life events, whereas Protestants might rely on their intrinsic religious orientation when confronted with uncontrollable events. Thus, religious coping may be helpful as a stress buffer or as a stress deterrent in different ways for particular groups faced with different events.

WHAT IS SO SPECIAL ABOUT RELIGION?

Religious coping appears to affect the outcomes to negative life events. Sometimes it is helpful and other times it may be harmful. However, an important question remains: Does religious coping add anything to the coping process above and beyond the effects of more traditional or nonreligious coping efforts? In other words, Does religious coping have anything unique to contribute to adjustment beyond secular methods of coping?

Generally, studies have shown that religious coping does predict outcomes to negative events above and beyond the effects of traditional measures of coping. Several studies have reported that religious coping added unique power to the pre-
diction of adjustment after controlling for the effects of traditional or nonreligious forms of coping (Pargament et al., 1990, 1994, 1995). For instance, measures of spiritual support have predicted adjustment above and beyond the effects of general measures of social support (Kirkpatrick, 1993). Greater social involvement in the church has been tied to lower levels of loneliness (Johnson & Mullins, 1989) and greater life satisfaction (Ellison, Gay, & Glass, 1989) even after the effects of other social relationships are controlled.

What is it that religion is adding? Religion seems to offer a response to the problems of human insufficiency. Try as we might to maximize significance through our own experiences and insights or through those of others, we remain human, finite, and limited. At any time we may be pushed beyond our immediate resources, exposing our fundamental vulnerability. Religion provides some solutions. The solutions may come in the form of spiritual support when other sources of support are lacking, explanations when no other explanations seem convincing, a sense of control through the sacred when life seems out of control, or new objects of significance when old ones are no longer compelling. Religion complements nonreligious coping by offering responses to the limits of our personal powers. Perhaps that is why the sacred become most compelling for many when human powers are put to their greatest test.

CONCLUSIONS AND IMPLICATIONS FOR MENTAL HEALTH PROFESSIONALS

Research on the relationship between religion and adjustment has taken both macro- and microanalytic approaches—and we have learned something from each. However, the finer detail that can be gleaned from microanalytic studies seems particularly important in our efforts to identify the value of specific forms of religious coping. When we move beyond a global view of religion and adopt a more microanalytic approach, we see that religion can be helpful, harmful, or irrelevant to adjustment. The results seem to depend on several factors: the method of religious coping, the sample, the situation, and the time frame. Future microanalytic research should consider each of these factors in more detail. For instance, Pargament, Koenig, and Perez (1997) developed a comprehensive set of religious coping scales that assess efforts to find meaning, gain control, obtain comfort, gain intimacy, enhance spirituality, and transform life. Research using other populations, such as, African Americans, Asians, Latinos, Muslims, and Jews, should also help to identify the helpfulness and/or harmfulness of various religious coping methods among specific populations (e.g., Brant & Pargament, 1995). More detailed examinations of particular stressful events will help delineate the value of religious coping in different life circumstances. Finally longitudinal studies are needed to assess the long-term effects of religious coping on mental health (e.g., Koenig et al., 1992).

What do these findings mean for the mental health professional? First, it is clear
that religion represents a resource for coping. Mental health professionals should be aware of this resource and feel more free to draw upon it in their efforts to help. In this vein, a few have already begun to integrate religious coping methods, such as spiritual support, religious reframing, rituals, and forgiveness, into their interventions with some promising results (Pargament, 1997).

Second, professionals need to be aware that some forms of religious coping may be problematic or, in fact, harmful to the coping process. Knowledge of these religious warning signs should be a standard part of the mental health professional's education. At a minimum, the professional should be aware of these “red flags” and their implications for the psychological well-being of the individual. These warning signs could also become issues for further discussion and possible change in helping relationships. Particular care must be taken to approach these issues with sensitivity and respect for the diversity of forms and functions religion serves in the lives of people.

Researchers and mental health professionals are likely to be less religious than those they work with and study (Shafranske & Malony, 1990). It is all too easy to overlook the religious dimension. However, for better or worse, religion is an integral part of the lives of many people in our society. By entering into and learning more about diverse religious worlds, we are likely to enhance our own understanding and ability to help others. If we ignore the religious side of life, then our theories and methods will remain incomplete.

REFERENCES


Pargament, K. I., Ensing, D. S., Fulfout, K., Olsen, H., Reilly, B., Van Haitsma, K., & Warren, R.


In 1995 the National Institute on Aging and the Fetzer Institute of Kalamazoo, Michigan, cosponsored a 2-day conference on Methodological Approaches to the Study of Aging and Health. A number of methodological and conceptual problems were identified in the summary report. Are simple measures of religious attendance and religious group or denomination adequate, or are more complex assessments of personal devotion or beliefs needed to determine the importance of religiousness to seniors' health? Should research focus on health attributes of individual religious groups or seek commonalities across faiths? If religiousness potentially prevents, buffers, or repairs the effects of stress, may it also have deleterious effects? If there are indeed health effects of religiousness, do they remain substantial after measures of tangible and intangible social supports are controlled?

Among the general conclusions, the report advised that "more involvement with clinical epidemiologic studies is needed." In this chapter we explore the relation of depressive symptoms to attendance at services and religious affiliation. More specifically, we examine antecedents and correlates of depressive symptoms in a sample of Catholic and Jewish community residents whose rates of depression vary considerably. Because older adults are more religious than younger adults and because depressive symptoms are more prevalent among the elderly, we expect a greater impact of religiousness upon depression if there is indeed a significant relationship. Data from the Norwood–Montefiore Aging Study offer
one example of how the epidemiology of depression may be studied in the context of religious characteristics.

**RELIGIOUS INVOLVEMENT AMONG OLDER AMERICANS**

With notable exceptions (Koenig, 1995; Levin, 1994; Meador et al., 1992), the importance of religion in the epidemiology of late life mental illness has received little recognition (Larson, Pattison, Blazer, Omran, & Kaplan, 1986). Yet religious institutions are widely available to the elderly (Palmore, 1980) and religion is an important source of support for older adults (Mechanic, 1974). More than 50% of elderly Americans attend services weekly, close to 80% within the last month, despite difficulties with transportation or physical disability. These figures have remained stable for more than a decade (Princeton Religion Research Center, 1994). Although religious practice decreases with age, personal devotion increases (Bergin, 1984; Young, & Dowling 1987). Both are positively related to life satisfaction (Markides, 1983) and morale (Koenig, Krale, & Ferrel, 1988). Also, a substantial number of older Americans say religion is a resource for coping (Koenig, 1994) or comfort (Princeton Religion Research Center, 1982). Older adults are more often involved in religious organizations than in any other (Payne, Pittard-Payne, & Reddy, 1972). However, only 13% of older persons identify clergy as a source of help for a suicidal friend (Gallup, 1992). Also, the mentally ill profess and practice less religious commitment (Bergin, 1984: Lindenthal, 1970; Stark, 1972).

**THEORETICAL MODELS FOR THE RELATIONSHIP BETWEEN RELIGIOUSNESS AND HEALTH**

Wheaton (1985) proposed several models of how social factors might buffer the effects of stress. Krause and Van Tran (1989) tested these models (the suppressor, distress-deterrent, and moderator models) to determine which might best account for the stress-buffering effects of religion. In the suppressor model, religious practice increases directly in response to stress to alleviate or buffer adverse effects. In the moderator model, religious practice reduces stress only at the extremes of experience, such as acute illness, onset of disability, or bereavement. In the distress-deterrent model, religious practice is independent of stress, i.e., it is not a response to stress but is beneficial nonetheless. Levin (1994) articulated the "prevention" model in which religious practices preempt stress by reducing stress-inducing behaviors such as divorce, unsafe sex, problems with diet, smoking, or alcohol. Ellison and George (1994) add that religion may have both direct and indirect effects on stress through association with "other resources" such as social supports. Idler (1987) theorizes that religious involvement may enhance health by
Reducing risky behaviors, increasing social cohesion, and providing coherent, consistent beliefs about coping and shared experience. Koenig (1994) and Kaplan, Monroe, Blum, and Blazer (1994) suggest that faith may have a palliative role in alleviating suffering. Although age and perceived mental and physical health largely account for the older person's declining sense of control over life, religiosity and religious preference may contribute positively to preserving one's sense of control (Wolinsky & Stump, 1996). Thus, whether the stress is psychological, physical, or social, the relationship to depression may be modeled for hypothesis testing. However, without adequate methodological controls, the "religious factor" in mental health might be dismissed as a proxy for sociodemographic status, social support, or personality (Levin & Schiller, 1987).

MENTAL HEALTH

Koenig and Fitterman (1995) reviewed 89 studies of religion and mental or physical health. Regarding the 12 studies of depression, most examined organizational rather than nonorganizational practices. Only 1 studied religious attitudes and only 2 were longitudinal in design. A number of the studies did not control for relevant covariables. Nonetheless, a significant inverse correlation between depression and religion emerged, more sizable with clinical than epidemiologic samples and more strongly in the relation of depression to physical disability. Though the overall correlation was small (-.24), it was substantial compared to other psychosocial measures. Of 7 studies examining anxiety and religion, the relation was less strong than that observed for depression and in a different direction with more anxious persons exhibiting more religiousness. Although 1 study found that elderly veterans with no religious affiliation were more likely to engage in life-threatening behaviors than their affiliated peers, no study has examined the relation of religion to suicidal thought or behavior in later life. Only 1 study (71 cancer patients) examined chronic pain in relation to religiousness and attendance at religious services. Religious variables were inversely related to pain but the analyses were not controlled for covariates. Two cross-sectional studies of caregiver distress showed significant relationships between religiousness and either lower caregiver burden or greater positive affect.

PHYSICAL DISABILITY AND HEALTH

There are a number of problems with studies of religiousness, health, and disability. First, poor health and disability are more sizable contributors to the dynamics of depressive symptoms in community-dwelling seniors than are social or demographic factors (Kennedy, Lowinger, & Metz, 1996). Changes in the use of social supports are more frequently influenced by baseline levels of health and disability than by social or economic factors (Kelman, Thomas, Kennedy, & Chen,
Thus the contribution of self-assessed health and physical disability to depression may overwhelm the genuinely beneficial influences or religiousness. In their review Koenig and Fitterman (1995) found that cross-sectional studies tend to find greater subjective religiousness among persons with more severe medical illness, indicating that religion may be nothing more than a post hoc defense against illness rather than a means of mastering health. Also measures of objective religiousness such as church attendance may reflect little more than the person’s freedom from disability (Levin & Schiller, 1987). Nonetheless, from the limited studies available, organizational religious activities such as attendance at services are truly associated with less physical disability and better self-assessed health as predicted by the prevention model.

As predicted by the suppressor model, nonorganizational religious activities such as prayer are associated with poorer objective health but not greater disability or poorer self-assessed health. The relation of disability and attendance at services is complicated by denominational issues as well. Attendance at religious services is a moral imperative for Catholics but is less so for some Jews and Protestants. Also, the major denominations within Judaism and within Protestant Christianity differ widely in both practices and beliefs (Glicksman, 1991). Elderly believers whose mobility is compromised by physical limitations or inadequate transportation may choose to forgo attendance if a synagogue or church from an unacceptable denomination is the only one nearby.

**RELIGIOUS PREFERENCE AS A PROXY FOR RESPONSE BIAS OR HEALTH-SEEKING BEHAVIOR**

Cross-cultural comparisons suggest that different religious groups have different social expectations (Lenski, 1961), attitudes toward mental illness (Guttmacher & Ellison, 1971; Suchman, 1969; Srole et al., 1962), expression of negative emotions (Glicksman, 1991), and forms of religious devotion. Kohn and Levav (1994) recount “over a century of clinical observations” from Kraepelin on, in which a larger than expected number of persons treated for depression were Jewish. Failure to account for difference in health-seeking behavior, frequency of readmission, diagnostic reliability, and the differential effects of other diagnoses, or to control for confounding variables, led to a biased view of Jewish vulnerability to depression. Conversely, a number of studies found that American Irish Catholics tend to deny feelings (McGoldrick & Pearce, 1981), to be stoic (Zborowski, 1952), and to be less likely to seek help (Zola, 1966). Jews, in contrast, reported more symptoms on the Cornell Medical Index than other ethnic groups of similar educational level (Croog, 1961).

Glicksman (1991) has also investigated differences in response styles and psychological well-being and suggests that Jews of Eastern European descent are much more likely than Irish or Italian Catholics to express negative affect. Similarly, the elevated prevalence of major depression among Pentecostals in the Duke
Epidemiologic Catchment Arena study may relate to greater emotionality as a group (Meador et al., 1992). What is not clear, however, is whether the differences in response styles are related to the development or course of mental disorders.

**RELIGIOUS PREFERENCE, DEPRESSION, AND ALCOHOL ABUSE/DEPENDENCE**

Reanalyzing data from the 4152 subjects of the Los Angeles and New Haven Epidemiologic Catchment Area studies, Levav, Kohn, Golding, and Weissman (1997) found higher period and lifetime prevalence of major affective disorder and dysthymia among Jews compared to others. Period and lifetime rates were 12.4 and 18.7% respectively for Jews, 9.0 and 16.0% for Catholics, and 8.6 and 16.0% for non-Jews, including Catholics. Symptoms of depression (dysphoria, insomnia, fatigue, and loss of concentration) among those who did not meet criteria for affective disorder were also more frequent among Jews. The higher prevalence of these symptoms, however, was accounted for by greater frequencies in Jewish males compared with non-Jewish males. Indeed, rates of depression approached a 1:1 male-to-female ratio within Jews. Lower rates of depression within other groups were made up for by a greater prevalence of alcohol abuse or dependence.

These findings confirmed those of other community surveys suggesting a greater vulnerability of Jews to depression (Yeung & Greenwald, 1992), with an equivalency of depression prevalence among men and women and lesser frequencies of alcoholism. Rates of depression were highest among the Jews from New Haven, whom the authors argued might be more traditional (Orthodox or Conservative) than their more secular counterparts in Los Angeles. In Los Angeles, the rates of alcohol abuse were higher and the ratio of depressive disorder reflected the more typical 2:1 female-to-male frequency of depression. Citing other studies, Levav and colleagues (1997) argue that the social constraints of less tolerance for alcohol abuse, also seen among the Amish, result in a compensatory increase in depression. When combined, the prevalence of alcohol abuse/dependence and major depression were not significantly greater among the Jews compared to other groups.

Frequency of attendance at religious services made no contribution to period or lifetime risk of depression in any of the religious groups. Only 170 of 431 Jewish respondents, however, were aged 65 or older. The relative youth of the sample suggested that this group may be less religious and less traumatized by the European Holocaust.

**RELIGIOUS PREFERENCE AS A PROXY FOR TRAUMA OR SOCIAL SUPPORT**

Although genetic factors may contribute to depression among Eastern European Jews (melancholia agitata Hebraica) (Hollingshead & Redlich, 1948), social
factors seem more compelling. The immigrant status of a religious group may explain the relation of advanced age and depression (Vega, Bohda, Hough, & Figueroa, 1987). In-migration to a less diverse community may be less distressing than arrival in a mixed group (Rahav, Goodman, Pepper, & Lin, 1986). Life stressors—notably the European Holocaust and anti-Semitism—might also play a role in depression (Brown et al., 1978; Lin and Ensel, 1984) and posttraumatic stress syndrome (Yehuda, Kahana, Southwick, & Gilles, 1994).

In a nationwide randomized sample of Jews in Israel aged 75–94, Ruskin et al. (1996) found 43% with significant levels of depressive symptoms. Higher rates were found among women, those with lower educational or income status, and those who immigrated from the Middle East or northern Africa. Persons who were either born in Israel or came to Israel before age 20 experienced significantly lower rates of depression. More than 50% of those who arrived in Israel at age 40 or older were depressed. Holocaust survivorship, "religious adherence," and number of self-assessed past traumatic experiences were not significantly associated with depressive symptoms.

Neither survivor distress nor the definition of exposed individual, however, are easily quantified. The effects of trauma early in life may be compounded by late life events. Yehuda et al. (1995) found that the severity of posttraumatic stress syndrome among Holocaust survivors was related both to the original stressor and to subsequent events. Posttraumatic stress syndrome disorder, however, may not adequately capture the mental morbidity for this population. Krystal and Niederland (1971) described sequelae of Holocaust survivorship. First, they described an anxiety syndrome associated with insomnia and nightmares; a second syndrome was chronic depression characterized by social isolation.

The definition of Holocaust survivorship also varies. Of the 8.8 million Jews living in Europe before the war, 3 million remained afterwards. An estimated 500,000 survived in hiding, labor camps, or the resistance, but only 75,000 survived the death camps (Epstein, 1977). Porter (1981) delegates Holocaust survivorship to these 575,000 but includes those German and Austrian Jews who fled Europe in the 1930s and others from the displaced persons camps who immigrated during or after the 1940s. Finally, there may be an indirect effect of Holocaust trauma that extends beyond the camp survivors. All Jews may not be Holocaust survivors, but in some sense all are Holocaust victims.

**THE NORWOOD AGING STUDY**

Data from the Norwood Aging Study indicate that among older community residents simple measures of religious preference and practice correlate with depressive symptoms. These data are relevant to Gallup’s call for religious institutions to take on a more prominent role in combating late-life suicide (Gallup, 1992), which is so frequently linked to depression. They are equally relevant to the primary health care of older Jewish and Catholic community residents in that disability is so intimately linked to the prevalence and prognosis of depression. Ap-
approximately 2480 Medicare households from the Norwood area of the North Bronx were sampled to yield 1855 randomly selected individuals who agreed to a baseline interview. The Norwood area differs from the Established Populations for the Epidemiologic Study of the Elderly (Cornoni-Huntley & Lafferty 1986), in that 39.6% express a Jewish religious preference compared to 13.9% in New Haven and 1% in the population samples of Iowa and Washington state, East Boston, and North Carolina. Nearly 48% of Norwood respondents express a Catholic religious preference compared to approximately 14% in Iowa and Washington state, 90% in East Boston and 54% in New Haven. Protestants made up 96% of the North Carolina site. Norwood respondents, in contrast to the national elderly population, were older, more often female, more often living alone, and had lower median incomes (Kelman, Thomas & Tanaka, 1994).

**MEASURES**

Respondents provided information on health, chronic illness, physical and cognitive functioning, utilization of and attitudes toward health care, interactions with family, friends, and social service agencies, and financial resources. They were also asked to indicate their religious preference as Catholic, Jewish, Protestant, none, or other and whether they attended religious services weekly, monthly, or less. The Center for Epidemiologic Studies Depression scale (CES-D) was used to measure the level of depressive symptoms experienced during the past week (Radloff, 1977). Roughly a third of persons meeting the 16-point criterion for a significant level of depressive symptoms also met diagnostic criteria for major depression. From 13 to 19% of older community samples score 16 or above on the CES-D (Kinsie, Lewinsohn, Maricle, & Teri, 1986; Lin & Ensel, 1984; Phifer & Murrel, 1986).

Twenty-four months after baseline, 85% of the original sample completed a second CES-D and provided information on changes in problems with activities of daily living, formal and informal support, and health. Persons scoring less than 16 on the CES-D at both baseline and the 24-month assessments were considered not depressed. Persons scoring 16 or greater at both the baseline and 24-month interviews were designated as attended religious services weekly, monthly, or less. The Center for Epidemiologic Studies Depression scale (CES-D) was used to measure the level of depressive symptoms experienced during the past week (Radloff, 1977). Roughly a third of persons meeting the 16-point criterion for a significant level of depressive symptoms also met diagnostic criteria for major depression. From 13 to 19% of older community samples score 16 or above on the CES-D (Kinsie, Lewinsohn, Maricle, & Teri, 1986; Lin & Ensel, 1984; Phifer & Murrel, 1986).

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Of the 1855 respondents, 711 (39.6%) reported a Jewish religious preference, 880 (47.7%) Catholic, and Protestants numbered 185 (10%). Persons indicating no religious preference (n = 35), not specified (n = 10), or one other than Jewish,
Catholic, or Protestant ($n = 34$) makeup 3.5% of the sample and were added to the Protestants to create an Other category for the purposes of analysis. Respondents not completing the CES-D ($n = 160$) tended to be confused, disabled, or ill and were more characteristic of persons scoring as depressed (Thomas, 1989) but equally represented across the three religious groups.

### DEMOGRAPHICS, HEALTH, AND DISABILITY

Jewish respondents were older and more educated than either the Catholics or Others. The level of income was more favorable for the Jewish than Other respondents but was not significantly different from that of the Catholics. The proportion of women, persons married, and persons living alone was equivalent across the groups. A higher percentage in the Other group were either separated or divorced compared to the Jewish or Catholics groups. The percentage who never married was larger among the Catholics. More of the Jewish respondents received both formal and informal social supports than the Catholics or Others. Although there were no significant differences for the number of problems with activities of daily living, more than half the Jewish respondents rated their health as no better than fair to poor compared to one-third of Catholics and 40% of Others.

Forty-one depressed respondents had visited a psychiatric social worker, psychologist, or psychiatrist within the previous 3 months, and more than half were Jewish. Cognitive impairment, defined by a score <18 on the Mini-Mental State Exam, and the use of psychotropic prescription medications were more prevalent among the Jewish respondents.

A sizable minority of the sample were foreign born ranging from nearly half the Jewish respondents to 40% of the Catholics and more than one-third of the Other group. Fifty-eight percent of the foreign-born Catholics were from Ireland, 12% from Italy, and 30% elsewhere. The majority of foreign-born Jewish respondents were from Eastern Europe (Russia, 34.5%; Poland, 30.2%) with the remainder from Hungary (8.6%), Austria (9.8%), or other areas (14%).

### RELIGIOUS PREFERENCE AND PRACTICE

Of the 16.9% of the sample who evidenced a significant level of depressive symptoms, <10% of the Catholics, 12% of Others, and >20% of the Jews were depressed (Table 9.1). The odds of being depressed for the Catholics were less than half that of the sample as a whole. For the Jewish respondents the odds were more than twofold greater.

Of the Catholics, close to three-fourths reported having attended religious services within the last month compared to 20% of the Jews and 38% of Others. For Jewish respondents and Others, the rates of depression were higher among those who did not attend compared to those who did, but the rates did not reach statistical significance. Protestants made up the majority of persons labeled as Other. Eleven percent of Protestants were depressed. Of those who had not attended services, 14.2% were depressed compared to 7.9% who attended, but the differences
TABLE 9.1 Religious Preference, Practice, and Odds of Depression

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>Depressed</th>
<th>$\chi^2$</th>
<th>Odds ratio</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catholic</td>
<td>1075</td>
<td>9.5</td>
<td>37.904*</td>
<td>0.462</td>
<td>0.362–0.591</td>
</tr>
<tr>
<td>Jewish</td>
<td>900</td>
<td>20.7</td>
<td>49.505*</td>
<td>2.308</td>
<td>1.829–2.914</td>
</tr>
<tr>
<td>Other</td>
<td>307</td>
<td>12.3</td>
<td>1.148</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Attend service monthly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>798</td>
<td>7.0</td>
<td>23.498*</td>
<td>0.369</td>
<td>0.244–0.559</td>
</tr>
<tr>
<td>No</td>
<td>277</td>
<td>16.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jewish</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>189</td>
<td>17.9</td>
<td>1.130</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>711</td>
<td>21.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>125</td>
<td>8.0</td>
<td>3.726</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>182</td>
<td>15.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Chi-squares and odds ratios were based on data weighted by number of household members age 65 years or older. ns, not significant. Adapted with permission from Kennedy et al. (1996). *$p < .0001$.

were not significant. However, the rate of depression among Catholics who did not attend services compared to those who did was more than doubled.

BASELINE CHARACTERISTICS EXPLAINING THE VARIANCE IN DEPRESSION

Logistic regression analyses of respondent characteristics identified seven variables significantly contributing to the explained variance in depression at $p < 0.01$ (Table 9.2). These included fair to poor health, problems with activities of daily living, living alone, Jewish identity, not attending services, being female, having less social support, having more years of education, and having cardiovascular diseases.

TABLE 9.2 Magnitude of Characteristics Associated with Depression

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Parameter estimate</th>
<th>Standard error</th>
<th>Wald $\chi^2$</th>
<th>$p$ value</th>
<th>Odds ratio</th>
<th>Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health fair/poor</td>
<td>-1.16</td>
<td>0.14</td>
<td>66.65</td>
<td>.0001</td>
<td>3.21</td>
<td>2.78–3.70</td>
</tr>
<tr>
<td>PADL</td>
<td>-0.70</td>
<td>0.14</td>
<td>23.90</td>
<td>.0001</td>
<td>2.02</td>
<td>1.75–2.34</td>
</tr>
<tr>
<td>Lives alone</td>
<td>-0.58</td>
<td>0.13</td>
<td>18.59</td>
<td>.0001</td>
<td>1.79</td>
<td>1.57–2.05</td>
</tr>
<tr>
<td>Jewish</td>
<td>-0.55</td>
<td>0.14</td>
<td>14.69</td>
<td>.0001</td>
<td>1.75</td>
<td>1.51–2.02</td>
</tr>
<tr>
<td>Not attend service</td>
<td>0.47</td>
<td>0.14</td>
<td>9.84</td>
<td>.001</td>
<td>1.60</td>
<td>1.38–1.86</td>
</tr>
<tr>
<td>Female</td>
<td>-0.42</td>
<td>0.15</td>
<td>7.37</td>
<td>.006</td>
<td>1.52</td>
<td>1.30–1.78</td>
</tr>
<tr>
<td>Social support</td>
<td>-0.40</td>
<td>0.17</td>
<td>4.96</td>
<td>.02</td>
<td>1.49</td>
<td>1.25–1.78</td>
</tr>
<tr>
<td>Education $\geq$ 9 years</td>
<td>0.34</td>
<td>0.13</td>
<td>6.62</td>
<td>.01</td>
<td>1.42</td>
<td>1.24–1.62</td>
</tr>
<tr>
<td>$\geq$ 2 Cardiovascular conditions</td>
<td>-0.32</td>
<td>0.14</td>
<td>4.71</td>
<td>.03</td>
<td>1.38</td>
<td>1.19–1.60</td>
</tr>
</tbody>
</table>

Note. PADL, one or more problems with activities of daily living. All missing values were replaced by mean values of the variables. Adapted with permission from Kennedy et al. (1996).
living, living alone, Jewish religious preference, nonattendance at religious services, female gender, and education ≥9 years. Receipt of formal and informal social support services and cardiovascular conditions were significant at \( p < .02 \) and \( p < .03 \), respectively, but other medical conditions, cognitive impairment, foreign birth, age, income, and receipt of Medicaid were not significant. Thus, both Jewish religious preference and failure to attend services contributed significantly to the variance even after measures of sociodemographic status, immigration, health and disability, and social support were controlled.

**EMERGENCE, PERSISTENCE, AND REMISSION OF DEPRESSION 24 MONTHS AFTER BASELINE**

Table 9.3 shows the longitudinal course of depressive symptoms from baseline to 24 months by comparing respondents in whom depressive symptoms emerged, remitted, persisted, or never reached clinical significance. Significantly more Jewish respondents experienced an emergence of depression. Jewish respondents also made up a greater percentage of persons in whom depression persisted but the differences did not reach statistical significance. The percentage of persons not attending services was significantly greater in the groups in which depression emerged and depression persisted.

We used stepwise and canonical discriminant function analyses to identify characteristics which distinguished the never depressed from those in whom depression emerged and to determine if Jewish religious preference and attendance at services would remain significant once other variables were taken into account. Baseline measures of health and disability made up most of the characteristics included in the model and accounted for 15% (average squared canonical correla-

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Never depressed (%)</th>
<th>Depression emerged (%)</th>
<th>Depression persisted (%)</th>
<th>Depression remitted (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 1223 )</td>
<td>( n = 142 )</td>
<td>( n = 93 )</td>
<td>( n = 116 )</td>
</tr>
<tr>
<td>Jewish</td>
<td>397 (32.4)</td>
<td>72 (50.7)(^a,b)</td>
<td>60 (64.5)</td>
<td>59 (50.8)</td>
</tr>
<tr>
<td>Catholic</td>
<td>643 (52.5)</td>
<td>53 (37.3)</td>
<td>26 (27.9)</td>
<td>41 (35.3)</td>
</tr>
<tr>
<td>Other</td>
<td>183 (14.9)</td>
<td>17 (11.9)</td>
<td>7 (7.5)</td>
<td>16 (14.0)</td>
</tr>
<tr>
<td>Attends services monthly</td>
<td>702 (57.4)(^c)</td>
<td>55 (38.7)</td>
<td>22 (23.7)(^d)</td>
<td>43 (37.1)</td>
</tr>
</tbody>
</table>

*Note. Adapted with permission from Kennedy et al. (1996).*

\(^a\)Significant difference between Jews and Catholics \( (\chi^2 = 17.51, df = 1, p < .0001) \).

\(^b\)Significant difference between Jews and others \( (\chi^2 = 5.70, df = 1, p < .01) \).

\(^c\)Significant difference between the never depressed and the emergence groups \( (\chi^2 = 17.94, df = 1, p < .0001) \).

\(^d\)Significant difference between the persistence and remission groups \( (\chi^2 = 4.33, df = 1, p < .03) \).
TABLE 9.4 Characteristics Distinguishing Respondents Who Were Never Depressed from Those in Whom Depression Emerged

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Partial $R^2$</th>
<th>$F$</th>
<th>$p$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in PADL at 24 months</td>
<td>.085</td>
<td>99.83</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Health worse at 24 months</td>
<td>.041</td>
<td>46.01</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Baseline health, fair/poor</td>
<td>.009</td>
<td>9.70</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Jewish</td>
<td>.006</td>
<td>6.51</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Education ≥ 9 years</td>
<td>.007</td>
<td>7.76</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Cognitive impairment</td>
<td>.004</td>
<td>4.47</td>
<td>&lt;.03</td>
</tr>
<tr>
<td>Baseline PADL</td>
<td>.004</td>
<td>4.50</td>
<td>&lt;.03</td>
</tr>
</tbody>
</table>

Note. PADL, one or more problems with activities of daily living. All missing values were replaced by mean values of the variables. Adapted with permission from Kennedy et al. (1996).

Depression among Jewish respondents

Because of the elevated prevalence of depressive symptoms among Jewish respondents, we examined characteristics which might distinguish the depressed from the not depressed Jews at baseline. Table 9.5 portrays the prevalence of depressive symptoms among foreign-born respondents which is higher across the board but higher still among Jewish persons born in Eastern Europe. Respondents born in Eastern Europe were older, less educated, and reported less income. They
received more tangible social support, attended religious services more often, and experienced poorer health and greater physical disability. The prevalence of cognitive impairment was significantly greater among persons of Eastern European origin than other Jewish respondents. Immigration after the European Holocaust was not associated with depression among foreign-born respondents, including those from Eastern Europe, as shown in Table 9.6. Birth in Eastern Europe remained significant after the contribution of other characteristics to the variance in baseline depression among Jewish respondents was controlled.

**CONCLUSIONS**

Our findings are consistent with a number of hypotheses offered to explain why religious groups might differ in their expression of depressive symptoms. These include the sociodemographic hypothesis of ethnic density, the cultural trait hypothesis of response bias, and the heredity hypothesis of Eastern European Jewish origin. Lacking a measure to assess the traumatic effects of the European Holocaust on the Jewish respondents, we can only speculate that a relationship exists. Jewish respondents did not report excess cardiovascular conditions which more than any other illnesses outside the central nervous system have been associated with elevated rates of depression (Oxman, Freeman, & Manheimer, 1995) or problems with activities of daily living. However, the greater prevalence and incidence of depression was accompanied by greater use of mental health services, psychotropic medications, and greater prevalence of cognitive impairment, suggesting that the Jewish participants were responding and acting as though they were genuinely depressed.

The elevated prevalence of depressive symptoms among Jewish respondents from Eastern Europe appears genuine and not fully explained by differences in health, disability, age, gender, or disadvantaged socioeconomic status. Whether Eastern European Jews are demoralized as suggested by Gliksman (1991) or suf-

---

**TABLE 9.6** Stepwise Discriminant Analysis of Characteristics Distinguishing the Depressed \((N = 156)\) from the Not Depressed \((N = 524)\) Jewish Respondents at Baseline

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>(F)</th>
<th>(p)</th>
<th>Average squared canonical correlation*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities of daily living problem</td>
<td>44.86</td>
<td>.0001</td>
<td>.06</td>
</tr>
<tr>
<td>Fair/poor self-assessed health</td>
<td>24.05</td>
<td>.0001</td>
<td>.09</td>
</tr>
<tr>
<td>Lives alone</td>
<td>14.85</td>
<td>.0001</td>
<td>.11</td>
</tr>
<tr>
<td>Eastern European born</td>
<td>10.68</td>
<td>.001</td>
<td>.12</td>
</tr>
<tr>
<td>Gender</td>
<td>4.86</td>
<td>.02</td>
<td>.13</td>
</tr>
</tbody>
</table>
ferring from melancholia agitata Hebraica as reported by Hollingshead and Redlich (1958), the health significance of our findings remains to be explored.

Regarding religious practice, depression was more frequent among all respondents not attending religious services suggesting that the hypothesized preventive model may apply particularly to Catholics. The regression analysis indicated that social supports did not substitute for failure to attend services in the variance of depression. Neither did problems with activities of daily living which might have explained the relationship for respondents too disabled to attend services. Among Eastern European-born Jewish respondents, the stress deterrent model may be a better fit in that depression and greater attendance at services were significantly associated.

Finally, differences in sociodemographics, disability and illness, immigrant status, and social supports did not account for the relation of lack of attendance at religious services and Jewish religious preference to symptoms of depression at baseline. Although failure to attend services was associated with the emergence and persistence of depression at 24 months, only Jewish religious preference remained significant once age, disability, and social support were controlled.

FUTURE AVENUES OF RESEARCH

Inferences from our data are limited by the 2-year interval between assessments of depressive symptoms, the lack of diagnostic data which might clarify the relation of depressive symptoms to depressive and other mental disorders, the availability of only baseline data for cognitive impairment, and the lack of information on the depth and dynamics of religious practice which might be associated with changes in health and disability. It is also important to note that our measures captured tangible rather than emotional support and that we did not assess the perceived adequacy of support. Neither do we have data on suicidal thought, appointment of health care proxy, possession of a living will or advanced directives, personality traits, or history of traumatic events. Thus, the influence of religious preference and practice on a number of health outcomes (mental disorders, suicidal ideas, cognitive impairment, and physical disability) and practices (use of psychotropic medications, health care proxy, and living will) remains uncertain. Investigating hypothesized mechanisms as well as health outcomes among two groups, Jews and Catholics, who appear to have different vulnerabilities to depression, has implications for their health services as well as those of the majority of Americans.

ACKNOWLEDGMENTS

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REFERENCES


mortality among the elderly in Alameda County Study. *American Journal of Epidemiology*, 126, 714–723.


Of the many functions of religion, providing peace of mind may be desired more frequently on a day-to-day basis than any other. Whether individuals enjoy greater well-being because of the promise of a life beyond this one, because of their belief in the efficacy of prayer, the comfort of ritual, the opportunity to socialize with friends, the strength of a philosophical system of beliefs, or the sense of being a part of something greater than oneself, religious belief and practice doubtless provide vast levels of comfort to millions throughout the world. That this is not the case for everyone should come as no surprise. Many would argue that religion can be as much a source of anxiety as it is a balm, or that religion first creates and then relieves anxiety. One concept that will be explored in this chapter is that the direction of influence may very well depend on which anxiety one has in mind, as well as which religion.

ANXIETY DEFINED

Included within the DSM-IV's (American Psychiatric Association, 1994) section on anxiety disorders are agoraphobia and panic disorder with or without agoraphobia, panic attack, specific phobias and social phobias, obsessive-compulsive disorder, posttraumatic stress disorder, acute stress disorder, anxiety disorder due to a general medical condition, substance-induced anxiety disorder, and generalized anxiety disorder. Generalized anxiety disorder is characterized by at least 6 months of persistent and excessive anxiety and worry.
We might also understand anxiety as it is usually defined, consisting of (Webster's Ninth New Collegiate Dictionary, 1988):

A painful or apprehensive uneasiness of mind usually over an impending or anticipated ill; fearful concern or interest; an abnormal and overwhelming sense of apprehension and fear often marked by physiological signs (as sweating, tension, and increased pulse), by doubt concerning the reality and nature of the threat, and by self-doubt about one's capacity to cope with it.

The characteristic words here are worry and fear, compounded by doubt, often with physical symptoms.

Busse and Pfeiffer (1969) define anxiety as a state of dread anticipation in which the object of the dread is vaguely defined. It includes tenseness, restlessness, increased heart rate, and sweating, all of which indicate preparedness for fight or flight. It has been estimated that 10–20% of elderly hospital patients have anxiety symptoms; they may be a consequence of medical illness, psychiatric illness, or a response to stressful life events (Hocking & Koenig, 1995). Cavanaugh (1993) cites estimates of up to 10% of women and 5% of men in the general population have symptoms of anxiety.

RELIGION AND ANXIETY

It would seem that religion is good for one's physical as well as mental health. In a major epidemiological study, Zuckerman, Kasl, and Ostfeld (1984) followed 400 elderly residents of New Haven, Connecticut. Detailed health histories and sociodemographic data were gathered, along with various behavioral and psychological indices. Controlling for demographic variables and health status, they found that three psychosocial variables were significant predictors of lower mortality: religiosity, happiness, and having children. Religiousness and happiness in particular reduced the risk of mortality among people who were in poor health.

In a very different type of study, Atkinson and Malony (1994) analyzed religious maturity among 32 older women and found that it related negatively to the MMPI depression subscale and the Anxiety and Psychological Distress scale. There are numerous other such studies, which have been reviewed in detail by Shafranske (1992) and by Koenig (1992, 1993a, & 1993b).

Koenig, George, Meador, Blazer, and Cyck (1994) examined religion and general anxiety, as well as depression and any DSM-III disorder, in groups of mainline and conservative Protestants as well as Pentecostals. The Pentecostals had significantly higher 6-month and lifetime rates of depression, anxiety, and any DSM-III disorder. Mainline Protestants had the lowest 6-month and lifetime rates of anxiety disorder and the lowest rates of any DSM-III disorder, and conservative Protestants had the lowest 6-month and lifetime rates of depressive disorder. Koenig (1992), however, has pointed out that, "It is well known that depression and anxiety are more common among the lower classes, the poor, and the uneducated" (p. 183). One might speculate that these terms fairly describe many of the
Pentecostals studied in the 1994 article, and perhaps their higher rates of anxiety and depression had socioeconomic, rather than religious, explanations. Also, it could be possible that individuals with higher levels of anxiety for some reason gravitate toward Pentecostal denominations. In terms of speculation, it is of course possible that Pentecostal affiliation in some way causes anxiety.

In another study of anxiety and religion, Koenig, George, Blazer, Pritchett, and Meador (1993) found that once the variables of chronic illness, low socioeconomic status, and greater functional disability were controlled for, ostensible relationships between anxiety and measures of religiosity disappeared. Similarly, in another 1993 study Koenig and colleagues found relationships between anxiety and religion fell away once social support was controlled for.

A study by Park, Cohen, and Herb (1990) claims to demonstrate significant negative correlations between extrinsic religiousness and both anxiety and depression but found none with intrinsic religiousness. They fail to point out, however, that extrinsic factors are those that are made up of socialization elements—getting up and going out to church, meeting with others, and attending events—just the kinds of things that anxious and depressed people may not be prone to do. Also, here we begin to see the muddy water created by studies of religion. What exactly is being studied when one studies religion?

Gordon Allport (1950) had pointed out the difference between extrinsic religiosity (the outward signs of religious socialization, such as churchgoing) and intrinsic religiosity (inward depth of feeling) and concluded that they were two distinct parallel continua. Anxiety studies frequently ignore this fundamental concept. Koenig, et al. (1993) recognized this issue in studies of religion and general anxiety and recommended that future studies of religion and anxiety should use a measure of the intrinsic dimension of religiosity.

DEATH ANXIETY AND RELIGION

A number of researchers have reasoned that the fear of death is certainly among the most universal fears, and that religion in one way or another should have an influence on death anxiety. Definition problems abound in this area of the literature, with few researchers giving adequate descriptions of religiosity, which a priori is a multidimensional construct. Some measure religion with questions on churchgoing, Bible reading, or listening to religious broadcasts on television or the radio. Others use a Likert item asking respondents to rank themselves on depth of religious feeling relative to other people. Several use scales of spiritual well-being that have not been adequately validated, and many use no scales at all but rather a jumble of questions on both extrinsic and intrinsic religiosity with hopes for the best.

Examples include an article by Rasmussen and Johnson (1994) in which respondents completed a death anxiety scale and a spiritual well-being scale. While no significant overall relationships were found between religiosity and death anx-
iety, the authors suggest a negative association between death anxiety and spirituality. Spirituality was said to consist of the degree of certainty with respect to life after death, level of life satisfaction, and degree of feeling of purpose in life, which we suggest is certainly a unique definition of the concept of spirituality.

Similarly, Alvarado, Templer, Bresler, and Thomas-Dobson (1995) tested a group using a death anxiety scale and several items of their own construction designed to probe for extrinsic and intrinsic religious factors. The only significant relationship with death anxiety was for the item, “How is the strength of your religious conviction when compared to those of others?” (p. 203), although what was called “death distress” and “death depression” also correlated negatively with a life after death item.

We also have thus sinned (Thorson, 1991), giving groups of students and adults a valid death anxiety scale along with a number of made-up items on church attendance, belief in an afterlife, and self-rated religiosity. Scratching around for correlations, we ultimately found some and published the study.

**PEOPLE ARE DIFFERENT, AND SOME PEOPLE ARE REALLY DIFFERENT**

While it has been shown that religious attitudes tend to remain quite stable across the lifespan, it is important to note that there is a great deal of intraindividual variability in religious attitudes and beliefs. In a recent study, Kim, Nesselroade, and Featherman (1996) demonstrate that an individual’s degree of religious coping changes according to situational factors. While religious beliefs have the capacity to influence many aspects of the coping process, they may be markedly different within the same individuals at different times, depending in part on the stimuli.

Given what Kim et al. (1996) have said about the variability of the coping response relative to religiosity, including both interindividual and intraindividual manifestations, it would stand to reason that religiousness might act as a buffer against some types of anxieties while serving no particular function relative to others. That is, the power of religion to ameliorate fears and dreads in some realms might not be present in others. Furthermore, the buffering effect of religion no doubt is present for some people but not for others.

In two studies measuring intrinsic religiosity and death anxiety (Powell & Thorson, 1991; Thorson & Powell, 1990), we sought to focus the way religiousness was measured by using a scale with demonstrated reliability and validity—Hoge’s Intrinsic Religious Motivation scale (1972). We isolated the sectors of our sample that represented the 40% highest and 40% lowest scores on Hoge’s scale. We also isolated those representing the 40% highest and lowest scores on Thorson and Powell’s Revised Death Anxiety scale (1992). The results for two cells were in the predicted direction. For those lowest in death anxiety, the correlation between intrinsic religiosity and death anxiety was −.31 (p < .001); for those highest in intrinsic religious motivation, the correlation was −.36 (p < .001).
There was a significant negative relationship demonstrated between death anxiety and religiosity for the highly religious as well as for the people with the least death anxiety.

However, there was no relationship for the remaining two cells: Those high in death anxiety demonstrated an insignificant correlation between religiosity and anxiety ($r = .08$). For those low in intrinsic religious motivation, the same was true: an insignificant correlation ($r = .11$). One might conclude from these data that the construct is missing for people who either have a high fear of death or who lack religiosity. High intrinsic religious motivation equals low death anxiety, equally, low death anxiety seemingly reflects higher religiosity. However, high death anxiety does not necessarily indicate low religiosity; nor does low religiosity reflect high death anxiety. Therefore, religion and death anxiety are seemingly related for some people but not everyone. Thus, it might be beneficial to remember that while it would seem to many that religiosity and well-being go together, Heath (1993) points out that mentally healthy persons need not be religious.

WHICH ANXIETY? WHICH RELIGION?

At this point we should note that just about all of the studies we have reviewed on death anxiety and religion are on samples in the United States or Great Britain. We argue that there is a pervasive Judeo-Christian system of beliefs in Western countries that is influential in terms of one’s understanding of religion. That is, while allowing for individual and denominational differences, the great majority of Americans and, perhaps, Europeans, would recognize a similar understanding of the meaning of religion: that there is a God or Supreme Being, and this Being is not only a creator but also a sustainer and is essentially beneficent and may be called upon in times of trouble, and that goodness is rewarded in a life beyond death. While the details of this understanding differ (and have caused any number of conflicts and bloody wars), the understanding is basically similar within the culture. It has been demonstrated that most Americans, for example, believe in an afterlife, and among those who do, most believe in an afterlife of reward (Klenow & Bolin, 1989). Those who have this understanding would, like those we identified in our 1990 study who are higher in intrinsic religiosity, probably have somewhat lower death anxiety. Perhaps they might also have less anxiety in general. However, the ones identified who have little intrinsic religious feeling—those who do not buy into the cultural understanding that has been described—do not necessarily have high death anxiety. For them, the relationship of the two concepts is simply missing.

RELIGION AND DEATH ANXIETY
IN DIFFERENT CULTURES

What happens when we examine other cultures and other religions? Instead of the prospect of survival of the personality after death, some Eastern religions em-
phasize extinction of selfhood, perhaps with a unification with a cosmic consciousness (Pressman, Lyons, Larson, & Gartner, 1992). It might be the case that those with a different conceptualization of religion have a very different understanding of death anxiety.

It could be said that the Judeo-Christian tradition heavily influencing American thought on an afterlife has been present in Hebrew—and subsequently Christian—thought at least since the time of the exile of the Jews in Babylon (Noss, 1969):

The older Jewish belief that the dead descend to a colorless existence in the pit of Sheol, a land of forgetfulness not unlike the Greek Hades and the Babylonia Aralu, was in large part superseded by a belief in the resurrection of the body to an afterlife of full mental vigor and awareness. (p. 404)

In contrast to somewhat vague, but nonetheless pleasant, biblical references to a promise of paradise in the afterlife in both the Hebrew Old Testament and the Christian New Testament, the Muslim Koran is very specific indeed about the last judgment and the separation of the unjust from the righteous, (the Koran as cited in Azberry, 1955):

Lo, the Tree of Ez-Zakkoum is the food of the guilty, like molten copper, bubbling in the belly as boiling water bubbles. “Take him, and thrust him into the midst of Hell, then pour over his head the chastisement of boiling water.” (XLIV.44–50).

While Muslims believe that death is God’s will and for that reason should not be questioned, their conceptualization of the afterlife may have a great deal to do with relationships between religiosity and death anxiety. Abu-Lughod (1993) points out that wailing, even excessive wailing, characterizes funerals in Muslim villages:

It is a truism of functionalist theories of religion that religion helps people cope with death. Yet in this Bedouin society, as I suspect in nearly all communities of Muslims, religiously inspired beliefs about death and appropriate religious responses are not the only ones invoked. . . . Since all Muslims hold that a person’s time of death is determined in advance by God (some say written on his or her forehead), to wail and lament in grief might be seen as a kind of public defiance or protest against God’s will. (pp. 188–189).

Cultural as well as religious factors influence death anxiety.

We have had the opportunity to compare Intrinsic Religious Motivation scale and Revised Death Anxiety Scale scores for samples from the United States and Kuwait (Thorson, Powell, Abdel-Khalek, & Beshai, 1997) and, in the present instance, Egypt. It is interesting to detect variations in conceptualizations of religiosity and death anxiety from these different cultural perspectives.

Muslims in Egypt are perhaps somewhat secularized in comparison to other Muslims. Most observers believe that it is fair to say that Muslims in more conservative countries view the predominantly Sunni population in Egypt as westernized and less religiously orthodox. Jonker (1996) notes that Shi’ite Muslims would consider themselves to be much more devout than their Sunnite brothers. Despite the fact that Egyptian Muslims are predominantly Sunni and are seen by other Muslims as more westernized and secular in their practices (certainly in com-
parison, for example, to those in Saudi Arabia or Iran), they remain committed practitioners. They turn toward Mecca to pray five times a day. Their lives are influenced greatly by their religion.

In addition to this difference from most Americans in the extrinsic practice of their religion, another cultural difference can be found in what Muslims believe takes place immediately after death. The Muslim ideal is to be buried, without embalming or display, within 24 hrs of death. Professor Moazziz Ali Beg of the Muslim University in Uttar Pradesh, India (personal communication, February 13, 1989), stated,

What is interesting is the fact that Muslims fear death in relation to two things: (1) Immediate consequences of death arising out of the happenings in the grave when the burial is over. Two angels are believed to descend in the grave for making certain interrogations with the departed person about his faith, and a wavering faith brings horrible punishment known as azab-e-qabr. This is one source of death anxiety. The other pertains to (2) remote consequences, meaning thereby the rising from the grave on the day of judgment which would settle the fate of the soul—Hell or Heaven.

The data in Tables 10.1 and 10.2 present items and scores on Hoge's (1972) scale of Intrinsic Religious Motivation for samples of males and females in Egypt

<table>
<thead>
<tr>
<th>Scale item</th>
<th>Americans</th>
<th>Egyptians</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N = 172)</td>
<td>(N = 249)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. My faith involves all of life.</td>
<td>2.56 (.92)</td>
<td>3.26 (.62)</td>
<td>8.05***</td>
</tr>
<tr>
<td>2. In my life I experience the presence of the Divine.</td>
<td>2.32 (.92)</td>
<td>3.37 (.59)</td>
<td>0.63</td>
</tr>
<tr>
<td>3. One should seek God's guidance when making every important decision.</td>
<td>2.41 (1.01)</td>
<td>3.44 (.69)</td>
<td>11.44***</td>
</tr>
<tr>
<td>4. My faith sometimes restricts my actions.</td>
<td>2.05 (1.02)</td>
<td>3.11 (.93)</td>
<td>10.81***</td>
</tr>
<tr>
<td>5. Nothing is as important to me as serving God as best as I know how.</td>
<td>2.12 (.93)</td>
<td>3.25 (.73)</td>
<td>13.23***</td>
</tr>
<tr>
<td>6. I try hard to carry my religion over into all my other dealings in life.</td>
<td>1.95 (1.00)</td>
<td>3.05 (.84)</td>
<td>11.94***</td>
</tr>
<tr>
<td>7. My religious beliefs are what really lie behind my whole approach to life.</td>
<td>1.93 (1.01)</td>
<td>2.74 (.93)</td>
<td>8.31***</td>
</tr>
<tr>
<td>8. It doesn't matter so much what I believe as long as I lead a moral life.</td>
<td>1.80 (1.10)</td>
<td>2.35 (1.25)</td>
<td>4.75***</td>
</tr>
<tr>
<td>9. I refuse to let religious considerations influence my everyday affairs.</td>
<td>1.95 (1.08)</td>
<td>2.93 (.94)</td>
<td>9.61***</td>
</tr>
<tr>
<td>10. I feel there are many more important things in life than religion.</td>
<td>2.05 (1.22)</td>
<td>3.01 (.99)</td>
<td>8.52***</td>
</tr>
</tbody>
</table>

Age                                                                 | 20.90 (1.84)| 20.84 (1.28) | 0.37  |
α Coefficient                                                          | .88         | .59         |
Total mean score                                                       | 21.15 (7.15)| 30.50 (4.05)| 15.48***

***p < .001.
and the United States. (Note that negatively phrased items are reversed in scoring; in every instance, a higher score indicates higher intrinsic religiosity.) Briefly, the predominantly Muslim respondents from Egypt show wide differences from their American counterparts in almost every aspect of intrinsic religiosity. The Egyptian females are significantly higher on every single scale item and the males are significantly higher on 9 of the 10. These data clearly demonstrate a much different understanding of religion in everyday life. Not only are the Muslims higher in extrinsic factors, such as daily worship, but also they are much higher in the intrinsic religious items contained in Hoge’s scale. One might conclude that religion plays a much greater part in these respondents’ lives than it does in the everyday life of most Americans.

From the totals in Tables 10.3 and 10.4, it would seem that death anxiety scores are in the expected direction: The Egyptians, who scored much higher in intrinsic religiosity, have lower total scores on the Revised Death Anxiety Scale. Interestingly, this was not the case for the Kuwaitis, whose scores are reported in Thorson et al. (1997); they had much higher death anxiety scores. They also had been in-
<table>
<thead>
<tr>
<th>Scale item</th>
<th>Mean (SD)</th>
<th></th>
<th></th>
<th>( t )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I fear dying a painful death.</td>
<td>2.56 (1.22)</td>
<td>2.26 (1.06)</td>
<td>1.65</td>
<td></td>
</tr>
<tr>
<td>2. Not knowing what the next world is like troubles me.</td>
<td>1.59 (1.17)</td>
<td>1.78 (1.10)</td>
<td>1.42</td>
<td></td>
</tr>
<tr>
<td>3. The idea of never thinking again after I die frightens me.</td>
<td>1.83 (1.23)</td>
<td>1.38 (1.02)</td>
<td>2.56*</td>
<td></td>
</tr>
<tr>
<td>4. I am not at all anxious about what happens to the body after burial.</td>
<td>1.87 (1.23)</td>
<td>2.61 (.97)</td>
<td>6.57***</td>
<td></td>
</tr>
<tr>
<td>5. Coffins make me anxious.</td>
<td>1.33 (1.05)</td>
<td>2.00 (.92)</td>
<td>6.73***</td>
<td></td>
</tr>
<tr>
<td>6. I hate to think about losing control over my affairs after I am gone.</td>
<td>1.76 (1.21)</td>
<td>2.00 (.96)</td>
<td>2.16*</td>
<td></td>
</tr>
<tr>
<td>7. Being totally immobile after death bothers me.</td>
<td>1.59 (1.19)</td>
<td>1.31 (.95)</td>
<td>2.57*</td>
<td></td>
</tr>
<tr>
<td>8. I dread to think about having an operation.</td>
<td>1.86 (1.21)</td>
<td>1.59 (1.08)</td>
<td>2.34*</td>
<td></td>
</tr>
<tr>
<td>9. The subject of life after death troubles me greatly.</td>
<td>1.27 (1.05)</td>
<td>1.30 (.94)</td>
<td>.30</td>
<td></td>
</tr>
<tr>
<td>10. I am not afraid of a long, slow dying.</td>
<td>2.72 (1.19)</td>
<td>2.15 (1.14)</td>
<td>4.90***</td>
<td></td>
</tr>
<tr>
<td>11. I do not mind the idea of being shut into a coffin when I die.</td>
<td>1.84 (1.15)</td>
<td>2.52 (1.10)</td>
<td>6.06***</td>
<td></td>
</tr>
<tr>
<td>12. I hate the idea that I will be helpless after I die.</td>
<td>1.61 (1.23)</td>
<td>1.71 (.97)</td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>13. I am not concerned over whether or not there is an afterlife.</td>
<td>2.70 (1.20)</td>
<td>2.16 (1.26)</td>
<td>4.44***</td>
<td></td>
</tr>
<tr>
<td>14. Never feeling anything again after I die upsets me.</td>
<td>1.61 (1.18)</td>
<td>1.38 (.96)</td>
<td>2.12*</td>
<td></td>
</tr>
<tr>
<td>15. The pain involved in dying frightens me.</td>
<td>1.99 (1.09)</td>
<td>1.58 (1.11)</td>
<td>3.78***</td>
<td></td>
</tr>
<tr>
<td>16. I am looking forward to a new life after I die.</td>
<td>1.39 (1.07)</td>
<td>2.52 (.97)</td>
<td>1.27</td>
<td></td>
</tr>
<tr>
<td>17. I am not worried about being helpless.</td>
<td>1.99 (1.15)</td>
<td>2.41 (1.11)</td>
<td>2.06*</td>
<td></td>
</tr>
<tr>
<td>18. I am troubled by the thought that my body will decompose in the grave.</td>
<td>1.41 (.98)</td>
<td>1.49 (.96)</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>19. The feeling that I will be missing out on so much after I die disturbs me.</td>
<td>1.88 (1.16)</td>
<td>1.39 (.98)</td>
<td>4.51***</td>
<td></td>
</tr>
<tr>
<td>20. I am worried about what happens to us after we die.</td>
<td>1.77 (1.16)</td>
<td>1.86 (1.11)</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>21. I am not at all concerned with being in control of things.</td>
<td>2.26 (1.08)</td>
<td>2.16 (1.13)</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>22. The total isolation of death is frightening to me.</td>
<td>1.64 (1.05)</td>
<td>1.70 (.95)</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td>23. I am not particularly afraid of getting cancer.</td>
<td>2.70 (1.10)</td>
<td>2.02 (1.14)</td>
<td>6.15***</td>
<td></td>
</tr>
<tr>
<td>24. I will leave careful instructions about how things should be done after I am gone.</td>
<td>2.23 (1.14)</td>
<td>2.16 (.94)</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td>25. What happens to my body after I die does not bother me.</td>
<td>1.78 (1.20)</td>
<td>2.16 (.89)</td>
<td>3.53***</td>
<td></td>
</tr>
</tbody>
</table>

| Age                         | 20.90 (1.84) | 20.84 (.04) |        |        |
| \( \alpha \) Coefficient   | .88         | .76         |        |        |
| Total mean score            | 47.16 (4.55) | 42.86 (9.40) | 2.70** |        |

\*\( p < .05 \).
\**\( p < .01 \).
\***\( p < .001 \).
### Revised Death Anxiety Scale: American and Egyptian Females

<table>
<thead>
<tr>
<th>Scale item</th>
<th>Mean (SD)</th>
<th>Americans (N = 172)</th>
<th>Egyptians (N = 249)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I fear dying a painful death.</td>
<td>3.00 (1.12)</td>
<td>2.50 (1.07)</td>
<td></td>
<td>5.08***</td>
</tr>
<tr>
<td>2. Not knowing what the next world is like troubles me.</td>
<td>1.82 (1.22)</td>
<td>1.88 (1.13)</td>
<td></td>
<td>.55</td>
</tr>
<tr>
<td>3. The idea of never thinking again after I die frightens me.</td>
<td>1.82 (1.23)</td>
<td>1.51 (1.09)</td>
<td></td>
<td>2.96**</td>
</tr>
<tr>
<td>4. I am not at all anxious about what happens to the body after burial.</td>
<td>2.19 (1.28)</td>
<td>1.59 (1.12)</td>
<td></td>
<td>5.64***</td>
</tr>
<tr>
<td>5. Coffins make me anxious.</td>
<td>1.53 (1.21)</td>
<td>2.18 (.94)</td>
<td></td>
<td>6.16***</td>
</tr>
<tr>
<td>6. I hate to think about losing control over my affairs after I am gone.</td>
<td>1.64 (1.19)</td>
<td>1.85 (.96)</td>
<td></td>
<td>2.15*</td>
</tr>
<tr>
<td>7. Being totally immobile after death bothers me.</td>
<td>1.74 (1.29)</td>
<td>1.20 (.96)</td>
<td></td>
<td>4.49***</td>
</tr>
<tr>
<td>8. I dread to think about having an operation.</td>
<td>2.34 (1.22)</td>
<td>1.63 (1.13)</td>
<td></td>
<td>6.89***</td>
</tr>
<tr>
<td>9. The subject of life after death troubles me greatly.</td>
<td>1.36 (1.12)</td>
<td>1.32 (.98)</td>
<td></td>
<td>.42</td>
</tr>
<tr>
<td>10. I am not afraid of a long, slow dying.</td>
<td>3.08 (1.10)</td>
<td>1.78 (1.15)</td>
<td></td>
<td>12.81***</td>
</tr>
<tr>
<td>11. I do not mind the idea of being shut into a coffin when I die.</td>
<td>2.23 (1.23)</td>
<td>1.44 (1.13)</td>
<td></td>
<td>7.43***</td>
</tr>
<tr>
<td>12. I hate the idea that I will be helpless after I die.</td>
<td>1.89 (1.26)</td>
<td>1.73 (1.02)</td>
<td></td>
<td>1.55</td>
</tr>
<tr>
<td>13. I am not concerned over whether or not there is an afterlife.</td>
<td>2.74 (1.17)</td>
<td>1.66 (1.21)</td>
<td></td>
<td>10.07***</td>
</tr>
<tr>
<td>14. Never feeling anything again after I die upsets me.</td>
<td>1.71 (1.25)</td>
<td>1.26 (.88)</td>
<td></td>
<td>4.62***</td>
</tr>
<tr>
<td>15. The pain involved in dying frightens me.</td>
<td>2.71 (1.16)</td>
<td>1.65 (1.14)</td>
<td></td>
<td>10.25***</td>
</tr>
<tr>
<td>16. I am looking forward to a new life after I die.</td>
<td>1.46 (1.11)</td>
<td>2.40 (.97)</td>
<td></td>
<td>10.08***</td>
</tr>
<tr>
<td>17. I am not worried about being helpless.</td>
<td>2.40 (1.14)</td>
<td>1.45 (1.09)</td>
<td></td>
<td>9.45***</td>
</tr>
<tr>
<td>18. I am troubled by the thought that my body will decompose in the grave.</td>
<td>1.73 (1.21)</td>
<td>1.34 (.96)</td>
<td></td>
<td>3.96***</td>
</tr>
<tr>
<td>19. The feeling that I will be missing out on so much after I die disturbs me.</td>
<td>1.96 (1.31)</td>
<td>1.36 (1.03)</td>
<td></td>
<td>5.67***</td>
</tr>
<tr>
<td>20. I am worried about what happens to us after we die.</td>
<td>2.06 (1.24)</td>
<td>1.77 (1.15)</td>
<td></td>
<td>2.69**</td>
</tr>
<tr>
<td>21. I am not at all concerned with being in control of things.</td>
<td>2.34 (1.13)</td>
<td>1.66 (1.09)</td>
<td></td>
<td>6.80***</td>
</tr>
<tr>
<td>22. The total isolation of death is frightening to me.</td>
<td>1.92 (1.22)</td>
<td>1.84 (1.08)</td>
<td></td>
<td>.77</td>
</tr>
<tr>
<td>23. I am not particularly afraid of getting cancer.</td>
<td>2.97 (1.13)</td>
<td>2.00 (1.13)</td>
<td></td>
<td>9.51***</td>
</tr>
<tr>
<td>24. I will leave careful instructions about how things should be done after I am gone.</td>
<td>2.46 (1.10)</td>
<td>1.97 (.91)</td>
<td></td>
<td>5.38***</td>
</tr>
<tr>
<td>25. What happens to my body after I die does not bother me.</td>
<td>2.28 (1.20)</td>
<td>1.83 (.92)</td>
<td></td>
<td>4.67***</td>
</tr>
</tbody>
</table>

| Age                         | 20.85 (1.94) | 21.02 (1.41) | 1.07 |
| a Coefficient               | .89         | .77          |
| Total mean score            | 53.39 (15.71)| 42.39 (9.82) | 9.36** |

*p < .05,  **p < .01,  ***p < .001.
fluenced by the compounding situational variable of having had a major war in their homeland in 1991 and 1992. It is illustrative to examine the tables more carefully to determine where the differences in death anxiety for the American and Egyptians lie.

Specifically, in Table 10.3 there are minor differences between the Egyptian and American males in two control items (nos. 6 and 7); one group is higher than the other on either of these, and not much can be made of these data. The real differences lie in two other factors measured by this multidimensional scale; fear of pain, on the one hand, and fear of decomposition or what happens to the body after death, on the other hand. The American males indicate significantly higher anxiety on items dealing with the physical pain involved in the dying process (Nos. 10, 15, and 23). The Egyptians, on the other hand, score much higher on the items dealing with what happens to the body in the grave (Nos. 4, 5, and 25). Again, note that negatives are reversed in scoring, so a higher score in each instance indicates higher anxiety. When answering the item, “I am not at all anxious about what happens to the body after the burial,” the Muslims’ response is that they are very anxious indeed. They are not particularly concerned about whether there is an afterlife (No. 13); they know there is, and they are worried about it. The only other difference among the two groups of males might also be ascribed to a cultural difference: The Americans are concerned about missing out on things after they die (No. 19).

Therefore, what might be concluded from an analysis of the items in Table 10.3 is that the differences in anxiety may have a cultural explanation as well as a religious one. American men seemingly have less of a need to present a Mediterranean macho image; they feel freer to express fears of pain. The Egyptians appear to have a characteristically Muslim fear of what happens to the body in the grave, perhaps the azab-e-qabr, the punishment inflicted by the two angels that visit the body immediately after burial.

This is missing in the women’s responses reported in Table 10.4 in which an entirely different picture of death anxiety is seen. The Muslim women are, as might have been expected, higher than their American counterparts on the “coffins make me anxious” item (No. 5) and the item concerning an afterlife (No. 16), but these are the only instances in which they are significantly higher. The American women, presumably feeling much more free to express anxiety, score significantly higher than the Egyptian women on virtually every element of death anxiety measured by the scale. They indicate higher levels of anxiety on the items dealing with fear of pain (Nos. 1, 8, 10, 15, and 23), on the items dealing with “not being” (Nos. 3, 14 and 19), on the loss of personal control associated with dying (Nos. 7, 11, 17, 21, and 24), and on one of the afterlife items (No. 13).

Most interestingly, however, is the wide difference between the American and the Egyptian women on the fear of decomposition and loss of bodily integrity (Nos. 4, 18, and 25). This is in the exact opposite direction from the data presented in Table 10.3 for the two groups of males. The American women are much higher than the Egyptian women in their fear of what happens to the body after burial.
In fact, the Egyptian women not only score lower than the American women on these “body” items but also score significantly lower on them than the Egyptian men.

Therefore, by examining four groups of people and what it is about death that they are anxious about, we have ample realm for speculation but ultimately produce more questions than answers. It would seem clear enough that Muslim males are more afraid of what happens to their bodies after burial. This may be the only aspect that seems to be clear. This construct does not seem to apply to Egyptian women. If this area of anxiety is rooted in religious belief, can we conclude that men in Egypt take religion more seriously? Does the fear of azab-e-qabr apply to men only?

Viewing these results from a different perspective: Are Americans more free to express vulnerability? This would seem to be the case, and within this cultural difference American women appear to be much more free to express anxiety than are American men. In our earlier studies of American samples, we found much higher death anxiety scores among female respondents, and the difference was clearly in the element of fear of decomposition and loss of bodily integrity (Thorson & Powell, 1988, 1990). Our explanation then, which still seems plausible, is that women in America are socialized, seemingly from birth, into the notion that they must look good. They are bombarded with messages from cosmetics and fashion industries that to look good is to be good, and that being plain or ordinary is somehow associated with unworthiness. Given that few people die in the peak of good health, it is exceedingly difficult to look good when one has died, and what happens to the body after death is horrific.

This evidently is a Western concept, and Muslim girls are socialized into modesty to a much greater degree. Indeed, fashionable dress and makeup among Muslim girls are proscribed by religious authorities and condemned as Western decadence, and they are exhorted to cover up to the eyeball by the time they enter their teens. These things are not as frequently practiced in a country such as Egypt as they are in other Muslim countries, but the ideals are present. Whether or not the Muslim women are concerned with being visited by angels in the grave after they die, the Americans apparently have a much more immediate fear of decomposition and all that aging and death imply, and this fear supercedes whatever the Egyptian women might express.

CONCLUSION

These data cannot be wrapped up into a neat package. What we think they imply though, is the paradox that, although culture and religion cannot be separated, culture may have as much or more to say about anxiety than does religion. Again, when looking for relationships between religion and anxiety, we must ask which anxiety and which religion. Depth of belief moderates anxiety, at least among some people. For those who are irreligious, the construct may well be missing.
Finally, in a study in another Muslim country (Malaysia), Azhar, Varma and Charap (1994) examined the value of religious psychotherapy among patients with anxiety disorder. There were 62 patients, all of who were seen as religious people. All were given supportive psychotherapy and anxiolytic drugs, but half of the sample also received religious psychotherapy that consisted of discussions of religious issues. All of the patients completed a rating scale for anxiety at the beginning of treatment and again at 3 and 6 months. Those who received the religious psychotherapy had significantly more rapid improvement in terms of anxiety symptoms.

Treatment modalities capitalizing on religiosity may well make good sense for people who are high in religiosity. While it may be true that, depending on which religion and which anxiety, being religious may be the cause of anxiety, it seemingly is equally true that religion provides peace of mind for a great number of people. It is evident that religiosity is a potent intervention for those who are religious, and that it shapes and buffers our anxieties as we face what often is a hostile world.

ACKNOWLEDGMENT

We acknowledge the help of Professor Ahmed Abdel-Khalek of the Department of Psychology, Kuwait University, for his translation of the two scales into Arabic and for providing the data from the Egyptian samples. We also thank Dr. E. C. Powell for his assistance with the data analysis.

REFERENCES